harman/kardon

PA5800/Signature 2.1

Multichannel Power Amplifier

TECHNICAL MANUAL

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A Harman International Company

Part No.: 1112-PA5800/2.1 Rev A 7/99

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FEATURES

The Harman Kardon PA5800/Signature2.1 is a flexible, state-of-the-art audio power amplifier designed to deliver high performance for use in home theater or music reproduction applications. The following are among its many features:

- Designed and manufactured in the United States.
- High-current output capability.
- Toroidal Power Transformer with individual secondary wiring and individual DC power supplies for each channel assure maximum output and minimum interaction between channels.
- Ultrawide Bandwidth Design
- Low Negative Feedback
- Low Harmonic and intermodulation distortion
- High-current power supply
- Massive Heat Sinks for quiet convection cooling
- Remote Turn-on/Turn-off circuitry with select Harman Kardon product or through optional accessories

SPECIFICATIONS

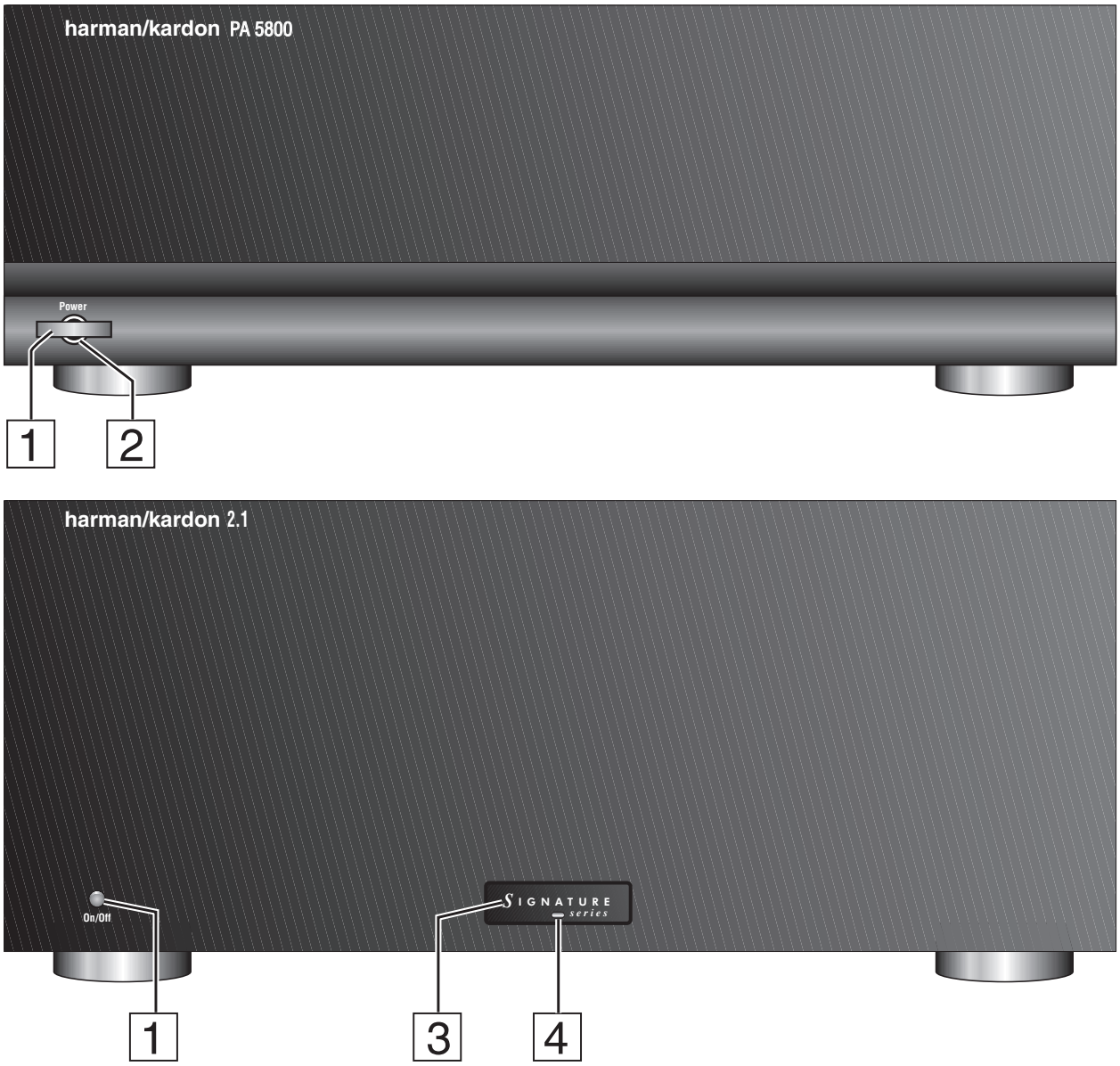
PA5800

Power Requirements:	120V version: 120VAC, 50/60Hz 230V version: 230VAC, 50Hz
High Current Capability:	73 Amps
Power Output:	5 x 80 watts @ 8 ohms 20Hz - 20KHz, <0.05% THD, All Channels Driven
Frequency Response:	0.22Hz - 160kHz - 3dB at 1 watt
THD/IMD:	Less than 110 at rated output
Power Bandwidth:	<5hz - 160kHz
Input Sensitivity:	1 volt for rated output
Input Impedance:	33k ohms
Remote Trigger Voltage:	6 - 12 volts DC (tip of plug must be “positive”(+))
Remote Trigger Impedance:	20K ohms
S/N Ratio (unweighted):	>100dB
S/N Ratio (weighted):	>115dB
Channel Separation	
(1kHz):	>95dB
(10kHz)	>80dB
Damping Factor	
(40Hz):	1.54%
(1hz):	1.46%
Idling Power Consumption:	26 watts
Full Power Consumption:	773 watts
Dimensions (H x W x D):	6-1/8 x 17-3/8 x 15-1/2 inches 155 x 440 x 394 mm
Weight:	30 lbs / 13.6 kg

Signature 2.1

Power Requirements:	120V version: 120VAC, 50/60Hz 230V version: 230VAC 50Hz
Power Output:	5 x 100watts @ 8 ohms 20Hz - 20kHz, <0.03% THD, All Channels Driven 5 x 150 watts @ 4 ohms 20Hz - 20kHz, <0.03% THD, All Channels Driven
High-Current Capability:	100 Amps
Frequency Response:	<1hz - >160kHz
Power Bandwidth:	<1hz - >160kHz
THD/IMD:	<0.03% at rated output
Crosstalk	<-87 dBr between any two channels at maximum output
Negative Feedback:	<25dB
Input Impedance:	33K ohms
Input Sensitivity:	1 volt for rated output
Remote Trigger Voltage:	6 - 12 volts DC (tip of plug must be “positive”(+))
Remote Trigger Impedance:	20K ohms
Dimensions (H x W x D):	7 ½ x 17 ¼ x 15 ¼ inches 191 x 438 x 387 mm
Weight:	47 lbs/21 kg

Signature 2.1 & PA5800 FRONT PANEL CONTROLS



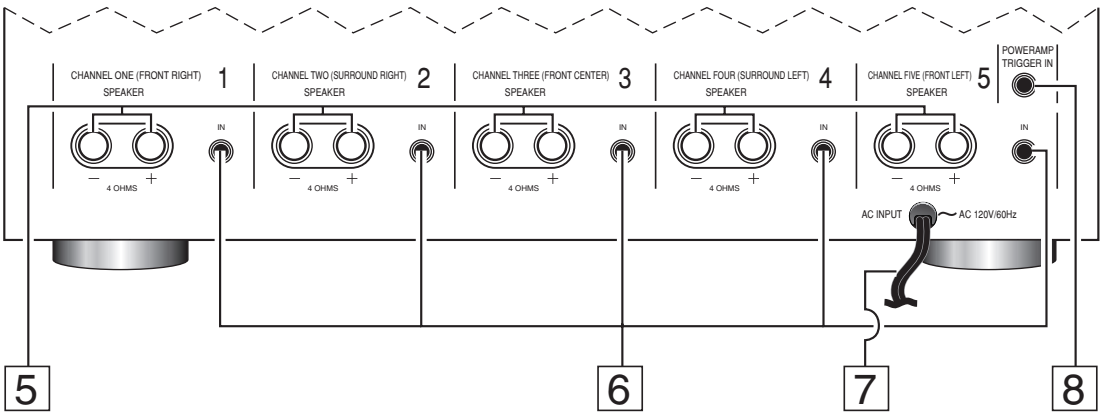
1. Power Switch: Press this switch to turn the PA5800/Signature 2.1 on for manual operation, or place it in the standby mode for automatic/remote turn-on when the unit in connected to a device with a compatible trigger circuit.

2. Power On Indicator: The color of this indicator varies with the status of the PA5800. It is red when the unit is off and in manual operation, amber in standby mode for automatic/remote turn-on when the PA5800 is connected to a device with a compatible trigger circuit, and green when the unit is on.

3. Power On Indicator: When the word Signature is illuminated in blue, the 2.1 is in a normal operating condition.

4. LED Indicator: The color of this indicator varies with the status of the 2.1. It is red when the unit is off and in manual operation, amber in the standby mode, and flashing green during warm-up. If the indicator flashes and alternates between red and amber, the 2.1 is in the protect mode, indicating a problem in the unit or connections to the speakers.

REAR PANEL CONNECTIONS



5. Speaker Outputs: Connections from these terminals should be made to the appropriate speakers in your system.

6. Audio Inputs: Connect the outputs of the PT2500, ADP303 or other surround processor, preamplifier or decoder to these jacks.

7. AC Power Cord: Connect this plug to a wall-mounted AC outlet. Due to the current draw of the PA5800/2.1, it is NOT recommended that the accessory outlets on the back of the audio/video components be used to power this product.

8. Remote Amp Trigger In: Connect this jack to the matching trigger output on a PT2500 or other compatible device to have the PA5800/2.1 automatically turn on when the devices are activated.

INSTALLATION

NOTE: When making any connections between source components, processor or preamplifiers and the PA5800/2.1, or when making any connection to speakers, be certain that both the input device and the unit are turned off. To ensure that there will be no unwanted signal transients that can damage equipment or speakers, it is always best to unplug all equipment from AC power outlets before making any connection . Modern electronic products often have a “standby” mode that may be activated even though the product may appear to be turned off.

Power Control Connections

The Harman Kardon PA5800/2.1 amplifier features a built-in remote turn-on system that will automatically turn on the amplifier when another devices in the system are switched on. To activate this system, this amplifier must be used in conjunction with a Harman Kardon PT2500, other compatible Harman Kardon products or other approved devices.

NOTE: Before making any connections to remote trigger outlets, it is critical that both the PA5800/2.1 and the triggering device be turned off. For additional safety, it is best that these connections be made while both products are unplugged from AC power sources.

Remote Turn-On Compatible Harman Kardon Products - Including the PT2500

Connect one end of the accessory cable supplied with the PT2500 to the Remote Amp Trigger in 8 jack on the rear of the PA5800/2.1. Connect the other end to the jack on the PT2500 that carries the same identification.

Remote Turn-On Using External AC-to-DC Converter

If the PA5800/2.1 is not used with a compatible Harman Kardon product, it is still compatible to activate the unit for automatic turn-on.

To control the amplifier in this manner you will need a small UL/CSA approved class 2 AC-to-DC power converter capable of delivering a 6 to 12-volt DC signal. The DC voltage should terminate in a standard 3.5 mm mono miniplug, with the tip of the plug “positive” (+). This type of converter may be obtained as a “Power Adapter” from many electronic retailers. Consult your dealer for further information.

Plug the AC adapter into a switched outlet that will be activated when you wish to have the amplifier turn on. This may be the switched outlet at the rear of an AV receiver or other audio equipment, an AC outlet that is part of a current sensing control unit activated by a preamp or surround processor or a switched AC wall outlet.

Connect the 3.5mm miniplug from the power converter to the Remote Amp Trigger in [8] jack on the rear of the PA5800/2.1.

Audio System Connections

As a general rule, avoid running any input signal or speaker wire connections next to or parallel with AC power cords. This may cause undesired hum or other interference that will greatly degrade signal performance.

When making connections with RCA-type plugs on interconnect cables, make certain to gently but firmly insert the plugs into the jacks on the rear of the PA5800/2.1. Loose connections can cause intermittent sound and may damage your speakers.

Connect the outputs of the PT2500 or your surround processor to the audio inputs of the PA5800/2.1 [6]. To simplify installation, it is best to follow the markings on the rear panel by connecting the Front Right output of the PT2500 to the Front Right input on the PA5800/2.1, following the same pattern for each channel.

Important Note: The PA5800/2.1 is not designed for use in Bridged configuration. Do not connect the same input or speaker to more than one channel.

To ensure that the high-quality signals produced by the PA5800/2.1 are carried to your speakers without loss of clarity or resolution, we recommend that you use high-quality speaker cable. Many brands of cable are available and the choice of cable may be influenced by the distance between your speakers and you amplifier, the type of speakers you use, personal preferences and other factors. Your dealer or installer is a valuable resource to consult in selecting a proper cable for connections between your amplifier and speakers.

Regardless of the brand or type of cable selected, we recommend that you use a cable construction of fine, multi strand copper with a gauge of 14 or smaller. When specifying cable, remember that the lower the number, the thicker the cable.

Cable with a gauge or 16 may be used for short runs of less than ten feet. We do not recommend the use of cables with an AWG equivalent of 18 or higher due to the power loss and degradation in performance that will occur.

Cables that run inside walls should have the appropriate markings to indicate listing with UL (“CL-2/CL-3”), CSA (“FT-4”) or appropriate safety agency standards that may require in your area. Questions about running cables inside walls should be referred to you installer or a licensed electrical contractor who is familiar with the NEC and/or the applicable building or electrical code in your area.

Connections to Speakers

The final step of the installation process is to connect the amplifier to your speaker using high-quality cable. A pair of binding posts is provided for each channels output. These posts will accept bare wire or banana-type plugs.

Note that one conductor of the speaker cable will have no markings or an indication of “-” for negative polarity, and the other will have a read line, brand-names markings, a colored thread or some other positive-polarity indication.

The wire with the positive indication should be connected to the red terminals on both the PA5800/2.1 and your speakers. The negative wire should be connected to the black terminal on the PA5800/2.1 and the speakers.

If bare wire is used for connections, strip approximately ¾” (20mm) of insulation from the end of each wire and carefully twist the strands of each conductor together. Be careful not to cut the individual strands or twist them off; for optimal performance, all strands must be used.

Next loosen the knobs of the speaker output terminals far enough so that the cap moves back on its threads past the U-shaped groove at the back end of the terminal. Making certain that you observe polarity by connecting the negative (-) wire to the black terminal and the positive(+) wire to the red terminal, pass the exposed wire through from the top of the slot until the wire is visible from the bottom end. Holding the wire in place, twist the cap back so that the connection is secured. Do not overtighten or use tools, as this may damage the plastic terminal cap or break the delicate wire strands and decrease system performace.

Important Note: When making speaker wire connections, be cartain that none of the strands from one lead touch any other lead. This will cause a short circuit and may damage your amplifier or speakers. Damage from short circuits caused in this manner is not covered by the product warranty.

Connections may also be made using standard 4mm 0D banana plugs. Before using a banana-type jack, make certain that the plastic screw caps on the PA5800/2.1 are firmly tightened by turning them clockwise until they are snug against the chassis. This will ensure that the maximum surface area of the plug is in contact with the jack. Once the wire has been attached to the banana plug following the plug manufacture’s instructions, simply insert the banana plug into the hole provided on the rear of the colored screw caps on the terminal posts. Be certain to observe proper polarity.

Finally, run the cables to the speaker locations. It is highly recommended that the length of cable connecting any pair of speakers be identical. For example, make certain that the cable length connecting left and right front or left and right rear (surround) speaker is identical, even though one

speaker may be physically closer to the amplifier than the other. Do not coil any excess cable, as this may become an inductor that creates frequency response variations in your system.

Connect the wire to the speaker, again being certain to observe proper polarity. Remember to connect the negative or black wire to the matching terminal on the speaker. Similarly, the positive or red wire should be connected to the like terminal on the speaker.

NOTE: While most speaker manufacturers adhere to an industry standard of using black terminals for negative and red for positive, some manufacturers may not adhere to this configuration. To ensure properly phased connections and optimal performance, consult the identification plate on your speaker terminals, of the speaker's manual to verify polarity. If you do not know the polarity of your speaker, ask your dealer or installer for advice before proceeding, or consult the speaker's manufacturer.

OPERATION

The PA5800/2.1 may be operated in either a manual or automatic mode. If the unit is being used in a stand-alone operation you should follow the instructions below for Manual Operation. When the PA5800/2.1 is connected to another compatible device such as the Signature 2.0 or PT2500 tuner, follow the instructions for Automatic Operation.

Make sure the power switch is in the off position before plugging in the AC power cord. After all the connections have been made to the amplifier's input jacks and speaker terminals, connect the power cord to an AC outlet. Turn on your source component and receiver/processor first; start with a low volume level to protect your speakers.

Manual Operation

The LED indicator should be glowing red if the unit is plugged in. Press the front panel switch to turn the unit on.

PA5800 - The indicator surrounding the power switch will turn green after a brief pause.

Signature 2.1 - The indicator will flash green briefly, and then go out; the front panel will then illuminate to blue.

To turn the unit off, press the power switch again. The LED indicator will return to red.

Automatic Operation

Before proceeding, make certain the connection between the Signature 2.0, PT2500, or other trigger source has been connected properly to the unit following the previous directions. At this point the trigger source should be off.

After all cables are connected and the PA5800/2.1 is plugged in, the LED Indicator should be glowing red. Press the power switch and the indicator will turn amber indicating the unit is in the standby mode and ready to turn on when it receives a signal from the triggering device. Finally, turn on your Signature 2.0, PT2500, or other trigger source to turn the PA5800/2.1 on.

PA5800 - The indicator surrounding the power switch will turn green after a brief pause.

Signature 2.1 - The indicator will flash green briefly, and then go out; the front panel will then illuminate to blue.

At the conclusion of your listening session, there is no need to turn the PA5800/2.1 off manually. When the Signature 2.0, PT2500, or other trigger source is turned off, the PA5800/2.1 will return to the standby mode.

Important Note: If you will not be using your audio system for an extended period of time, such as a vacation, we recommend turning the PA5800/2.1 off using the power switch.

IDLE CURRENT ADJUSTMENT PA5800/Signature 2.1

Locate test points:

PA5800 - P75A, P75B, P75C, P75D, P75E
Signature 2.1 - P2, P4, P6, P8, P10

These are 2 pin female molex connectors (5 total, 1 per channel) on the MAIN AMPLIFIER PCB.

Attach a DC voltmeter (set to a low range) to these points. This is best accomplished by making up a "test plug" using a male molex connector that fits into the one in the unit, with wires attached, for connection to the voltmeter. An alternative method is to use two "mini-grabbers" to attach to the two outer pins on each connection. Warning: Do not accidentally short the two points together with a meter probe during adjustment.

Adjustment Points:

PA5800 - R70A, R70B, R70C, R70D, R70E
Signature 2.1 - R22, R55, R103, R151, R199

Adjust to 25mv across test points, one channel at a time until all channels comply.

PROTECT MODE

Input/Output Protection

Under some conditions, such as a shorted speaker wire, DC voltage on an input connection or thermal overload, the amplifier will place itself in a “protect mode” to prevent damage to the amplifier.

Signature 2.1

When this happens, the LED Power Indicator will flash and alternate between red and amber.

PA5800

When this happens, the LED power indicator will flash amber.

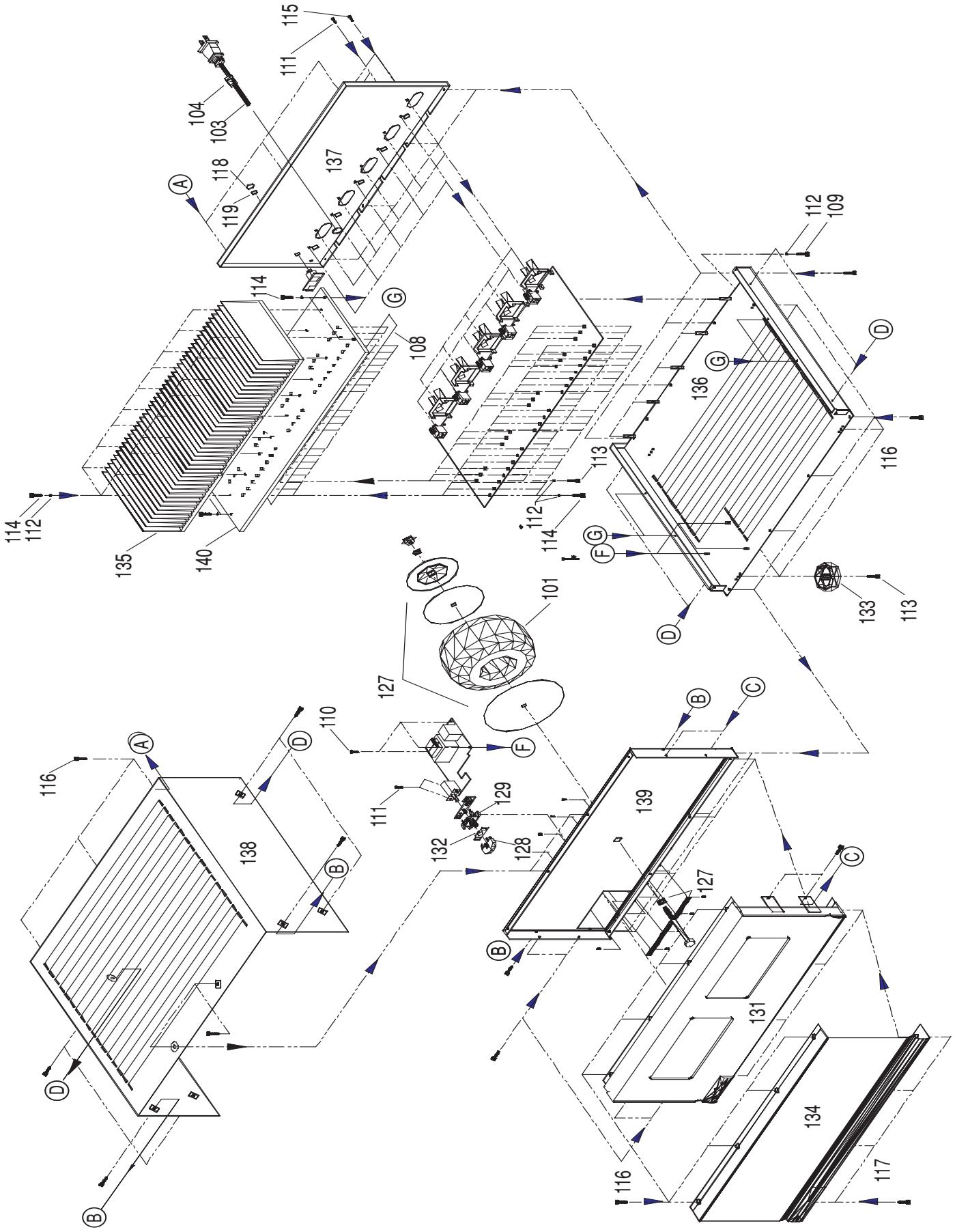
When this occurs, **IMMEDIATELY** turn off the unit using the power switch and correct the problem. Then turn the unit back on. If the unit continues to go into protect mode, contact your dealer or installer for assistance.

TROUBLE SHOOTING

The items listed below are a brief guide to minor problems that may arise with audio equipment such as the PA5800/2.1. Before taking a unit in for service, you should check to see if any of these hints solve the problem. If these solutions do not rectify the problem or if the problem recurs, contact your dealer or an authorized Harman kardon service depot for assistance.

PROBLEM	DIAGNOSIS	TROUBLESHOOTING HINTS
Amplifier will not turn on.	■ Power Switch turned off. (No Power Light LED)	■ Turn on Power Switch
	■ Remote trigger cable not properly connected.	■ Verify connection of trigger cable at both ends
Amplifier turns on, but no audio from one or more channels	■ Inputs not connected to proper jack.	■ Check input connections.
	■ Speakers not connected Properly.	■ Check speaker connections.
	■ Improper settings or output levels from processor or controller.	■ Check the settings on your preamp, processor or controller.
Audio plays, then cuts off.	■ **Signature 2.1** - amplifier shorted (LED flashes amber and red).	■ Check speaker connections for Short circuit.
	■ **PA5800** - amplifier shorted (LED flashes amber)	
Hum	■ **Signature 2.1** - Objectionable hum (coming from unit itself, not from loudspeakers).	■ Certain types of half-power light dimmers on the same AC circuit may cause this, or any other electronic device That introduces DC into the AC circuit the unit is plugged into. Remove offending device; or plug the unit into a different AC circuit. Otherwise: If upon internal inspection the POWER SWITCH PCBdoes not have the designator HA206-0003-C printed on it (near the relays), order this board by part number HA206-0003-C from Harman.

PA5800 MECHANICAL EXPLODED VIEW

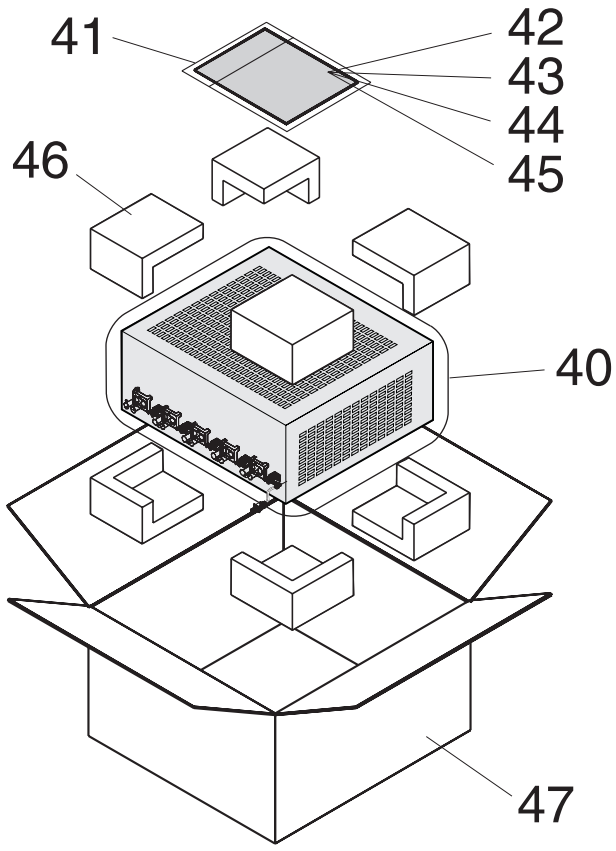


PA5800 MECHANICAL PARTS LIST

Ref.#	Part #	Discription	Qty
101	A080-0007-B	TRANSFORMER PA5800, 120V, UL SPECS	1
	A092-0061-0	FASTON, F, V, .250X.032X.260, 14-16GA	2
103	A095-0021-0	CORD, 2X16GA, FLAT, 8FT, DOM	1
	100-0003-0	STRAIN RELIEF, 2X16GA, SR-5KN-4	1
	100-0018-0	WIRE SADDLE ADH. BASE	2
	100-0033-0	CABLE TIE - PLT 1M-M, SMALL	7
	100-0126-0	HOLDER, CABLE TIE .75" SQUARE ADH.	3
	105-0009-0	INSULATOR TAPE, 3/4"x7 MIL ADH. BACK	
	111-0101-0	BOLT, 4-40, 5/8, PHP, CAD.	5
	111-2041-0	BOLT, 4-40, 1/4, PHP, INT STAR WASHER, ZINC	3
	111-3080-0	SCREW, 4AB, 1/2, PHP, B.Z.	7
	111-7011-0	WASHER, #4, SPLIT	62
	111-8061-0	TR-BOLTM 4-40, 3/8, PHP, CAD	19
	111-8081-0	TE-BOLT, 4-40, 1/2, PHP, CAD	42
	112-3080-0	SCREW, 6AB, 1/2, PHP, B.Z.	5
	112-8040-0	TR-BOLT, 6-32, 1/4, PHP, B.Z.	27
	112-8050-0	TR-BOLT, 6-32, 5/16, PHP, BO	4
	115-6003-1	NUT, 8MM, HEX, CAD, B.O.	1
	115-7008-0	WASHER, 8MM, BELLEVILE, SPRING STEEL	1
	153-0100-0	SAFETY LABEL (RISK OF FIRE) NORMAL BLOW FU	1
	202-0006-B	CABLE ASSY.	1
128	HA090-0001-A	POWER SWITCH BUTTON	1
	HA090-0002-A	LIGHT PIPE INDICATOR	1
	HA090-0003-A	SWITCH SPRING	1
	HA090-0004-A	PLASTIC FRONT BODY SUB PANEL	1
	HA090-0005-A	LIGHT SHIELD	1
133	HA101-0000-A	FOOT	4
134	HA132-0001-A	FRONT PANEL ALUMINUM	1
135	HA132-0002-A	HEAT SINK	3
136	HA132-0003-B	FAB, CHASSIS, BASE	1
137	HA132-0004-A	REAR PANEL	1
138	HA132-0005-B	FAB, TOP COVER	1
139	HA132-0006-B	FAB CROSS BRACE	1
140	HA132-0007-A	SINK PLATE	1
	HA206-0001-B	POWER SWITCH BOARD	1

PA5800 PACKING EXPLODED VIEW

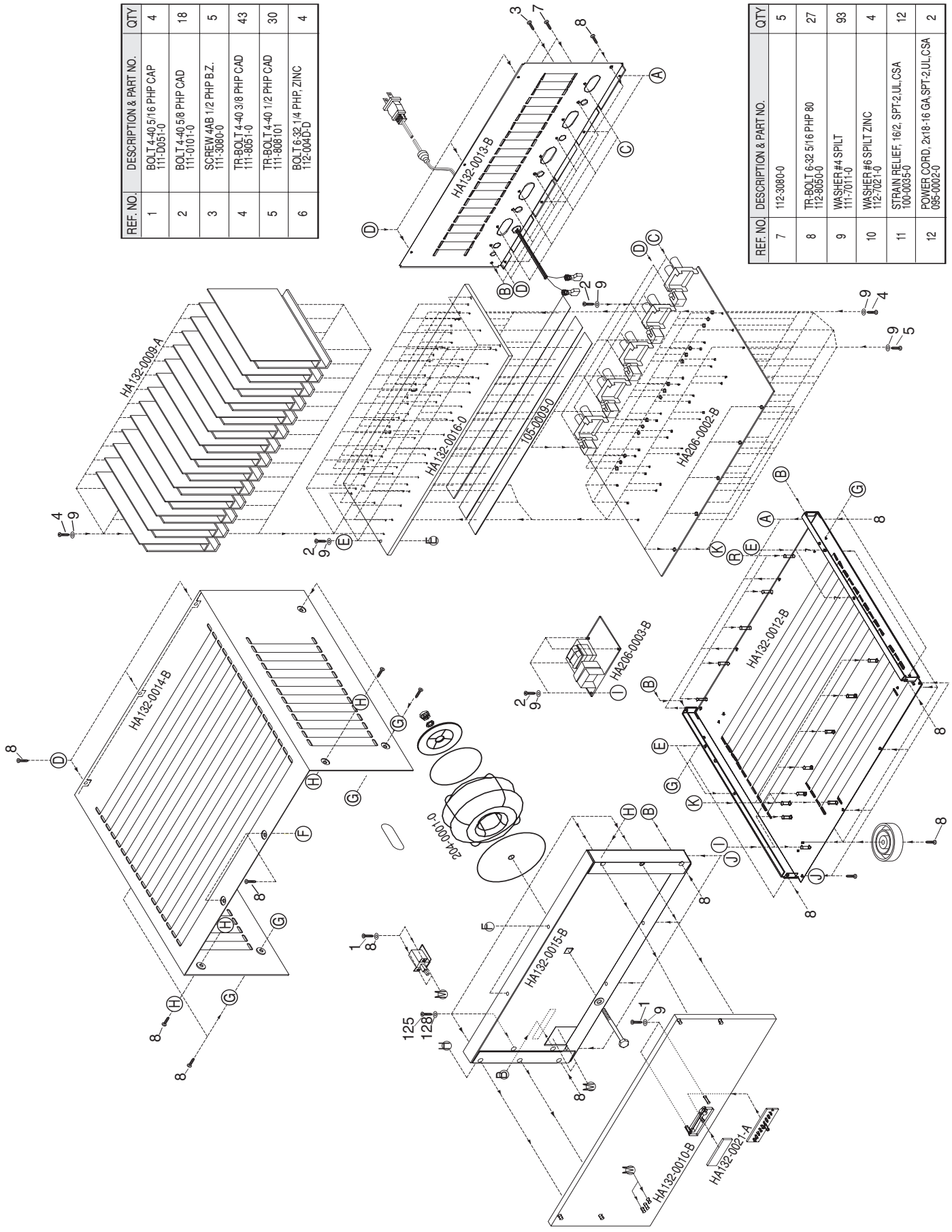
Ref.#	Part #	Discription	Qty
40	150-0089-0	BAG POLY 24"x30"x3 mil with vent holes	1
41	150-0103-0	BAG POLY 9"x12"x2 mil CLEAR	1
42	HA160-0000-A	OWNER'S MANUAL	1
43	HA160-0001-A	WARRANTY SHEET	1
44	HA160-0002-A	CUSTOMER CARD	1
45	160-0005-0	GROUNDING SAFETY SHEET	1
46	HA151-0001-A	FOAM PACK CORNERS (4 TOP/4BOTTOM 8 PER SET)	8
47	HA150-0000-A	CARTON	1



Signature 2.1 MECHANICAL EXPLODED VIEW

REF. NO.	DESCRIPTION & PART NO.	QTY
1	BOLT 4-40 5/16 PHP CAP 111-D051-0	4
2	BOLT 4-40 5/8 PHP CAD 111-0101-0	18
3	SCREW 4AB 1/2 PHP B.Z. 111-3080-0	5
4	TR-BOLT 4-40 3/8 PHP CAD 111-8051-0	43
5	TR-BOLT 4-40 1/2 PHP CAD 111-808101	30
6	BOLT 6-32 1/4 PHP, ZINC 112-004D-D	4

REF. NO.	DESCRIPTION & PART NO.	QTY
7	112-3080-0	5
8	TR-BOLT 6-32 5/16 PHP 80 112-8050-0	27
9	WASHER #4 SPILT 111-7011-0	93
10	WASHER #6 SPILT ZINC 112-7021-0	4
11	STRAIN RELIEF, 16/2, SPT-2,UL,CSA 100-0035-0	12
12	POWER CORD, 2x18-16 GA,SPT-2,UL,CSA 095-0002-0	2

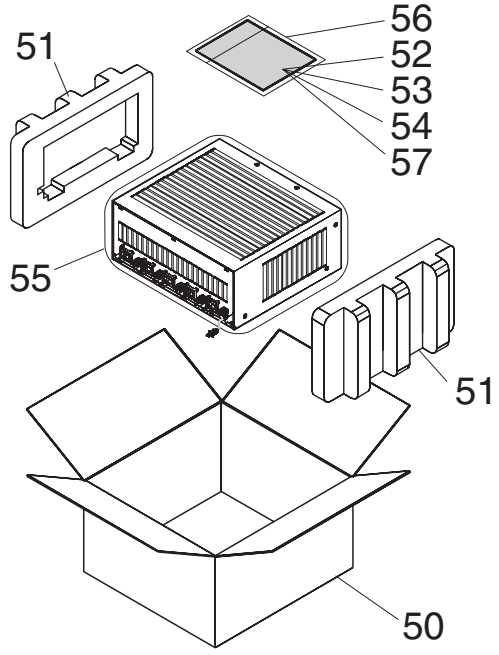


Signature 2.1 MECHANICAL PARTS LIST

Ref.#	Part #	Discription	Qty
	A080-0010-A	TRANSFORMER SIG 2.1, 120V TO SP	1
	A080-0011-A	TRANSFORMER SIG 2.1, 230V	1
	A091-0007-0	FUSE, 5MM, 0.5A, 125V, FAST, UL, CSA	1
	A091-0008-0	FUSE, 5MM, 5A, 125V, FAST, UL, CSA	10
	A091-0011-0	FUSE, 5MM, 10A, 125V, FAST, UL, CSA	1
	A092-0061-0	FASTON, F, V, .250X.032X.260, 14-16GA	1
	A092-0068-0	FASTON, F, V, .187X.020X.205, 14-16GA	1
	A093-2500-0	HSG, 2MMX7, 26GA, IDC	2
	A095-1002-0	WIRE 26 AWG, BLK, 7 STRAND, UL1061 1	1
	A095-0002-0	POWER CORD 16 GAUGE	1
	100-0011-0	STRAIN RELIEF, SPT-2, UL, CSA	1
	100-0035-0	CABLE TIE, BLACK, 4"-18 LB	10
	100-0126-0	HOLDER, CABLE TIE .75" SQUARE, ADHE	5
	101-0002-0	FOOT BLACK ANODIZED/RUBBER GASKET	4
	102-0003-0	BUTTON CAP, LOUDNESS, H/K	1
	105-0009-0	INSULATOR TAPE, 3/4"X7 MIL ADHESIVE	4
	111-0051-0	BOLT, 4-40, 5/16, PHP, CAD	2
	111-0061-0	BOLT, 4-40, 3/8, PHP, CAD	2
	111-0101-0	BOLT, 4-40, 5/8, PHP, CAD.	18
	111-3080-0	SCREW, 4AB, 1/2, PHP, B.Z.	5
	111-7011-0	WASHER, #4, SPLIT	93
	111-8061-0	TR-BOLT, 4-40, 3/8, PHP, CAD	43
	111-8081-0	TR-BOLT, 4-40, 1/2, PHP, CAD	30
	112-0040-0	BOLT, 6-32, 1/4, PHP, ZINC	4
	112-3080-0	SCREW, 6AB, 1/2, PHP, B.Z.	5
	112-7001-0	WASHER, #6, FLAT, CAD	4
	112-7021-0	WASHER, #6, SPLIT ZINC	4
	112-8050-0	TR-BOLT, 6-32, 5/16, PHP, BO	27

Ref.#	Part #	Discription	Qty
	153-0100-1	SAFETY LABEL(RISK OF FIRE), FAST F	1
	HA132-0009-A	SIG 2.1, FIN PLATE	28
	120-0002-1	ALUM .080, 5052-H32, 6.00X5.15 +/-	1
	HA132-0010-A	SIG 2.1 FRONT PANEL, FINISHED	1
	HA132-0012-B	SIG 2.1 CHASSIS	1
	111-6036-0	NUT, PEM, S-440-1 FOR .040 MIN. THK	4
	112-6009-0	STANDOFF, SO-6440-24	14
	120-0019-0	STEEL, 18 GA.EGC .047 48X120 FPR	480
	HA132-0013-B	SIG 2.1 REAR PANEL, 120V	1
	120-0019-0	STEEL, 18 GA.EGC .047 48X120 FPR	198
	HA132-0014-B	SIG 2.1 TOP COVER	1
	120-0012-0	STEEL, 20 GA.036 EGC 48X120	615
	HA132-0015-B	SIG 2.1 CROSS BRACE	1
	120-0008-0	STEEL, 16 GA.EGC. 48X120	198
	HA132-0016-B	SIG 2.1 SINK PLATE	1
	129-0003-A	PA5800 SINK PLATE BLANK 16.7000"	1
	HA132-0021-A	LOGO, SIGNATURE SERIES, ACRYLIC	1
	HA202-0003-A	WIRE ASSY, 26GA, BLK, 9", 2PIN, UL/CSA	1
	A093-1000-0	HSG, 2MMX2, 26GA, IDC	2
	A095-1002-0	WIRE 26 AWG, BLK, 7 STRAND, UL1061 1	1
	HA202-0004-A	WIRE ASSY, 26GA, BLK, 7", 7PIN, UL/CSA	1
	A093-2500-0	HSG, 2MMX7, 26GA, IDC	2
	A095-1002-0	WIRE 26 AWG, BLK, 7 STRAND, UL1061 1	1
	HA202-0005-A	WIRE ASSY, 26GA, BLK, 18.5", 5PIN, UL/	1
	A093-1003-0	HSG, 2MMX5, 26GA, IDC	2
	A095-1002-0	WIRE 26 AWG, BLK, 7 STRAND, UL1061 1	1
	HA206-0002-B	SIG 2.1 POWER AMP BOARD, 120V	1

Signature 2.1 PACKING EXPLODED VIEW



Ref.#	Part #	Discription	Qty
50	HA150-0001-A	SIG 2.1 CARTON	1
51	HA151-0002-A	SIG 2.1/1.5 FOAM PACK	1
52	HA160-0001-A	HARMAN WARRANTY SHEET	1
53	HA160-0002-A	HARMAN CUSTOMER CARD	1
54	HA160-0003-A	SIG 2.1 OWNER'S MANUAL	1
55	150-0089-0	BAG POLY 24X30 3 MIL WITH VENT HO	1
56	150-0103-0	BAG, PLOY 9"X12"X2MIL CLEAR	1
57	160-0005-0	GROUNDING SAFETY SHEET	1

PA5800 ELECTRICAL PARTS LIST

Power Switch/Remote Trigger Board

Reference #	Part #	Description	Quantity
Integrated Circuit			
U254	A001-2009-0	LM556CN DUAL TIMER	1
Transistors			
Q218, 225, 226, 240, 245, 251	A010-0012-0	MPSA06 NPN 80V 500MA TO-92	6
Q232, 234	A010-1013-0	MPSA56 PNP 80V 500MA TO-92	2
Diodes			
D212, 213, 214, 215	A020-2106-0	1N4004, RECT, 1A, 150V, DO-41	4
D217, 231, 236, 238, 241, 243, 264	A020-1000-0	1N4148, RECT-FAST, 200MA, 100V, 4NS, DO-35	7
D260	A020-0050-0	1N751, ZENER, 5V 10%, 400MW, DO-35	1
D270	A025-0012-0	LED, RED/GRN, 5MM, 630NM/560NM, 15MCD/15MCD	1
Capacitors			
C204	A034-7103-0	CAP, CERAMIC DISK, .01μF, 10%, X-250V	1
C210, 220, 224, 228, 259, 261	A031-0108-0	CAP, ELEC, RAD, 100μF, -10%+50%, 16V	6
C211, 216, 244, 257, 262	A030-2104-0	CAP, CER, AX, .1μF, 10%, 50V, X7R	5
C247, 249	A031-2106-0	CAP, ELEC, RAD, 10μF, -10%+50%, 50V	2
C253, 255	A030-2103-0	CAP, CER, AX, .01μF, 10%, 50V,X7R	2
C266	A031-0477-0	CAP, ELEC, RAD, 470μF, 20%, 10V	1

Resistors

R222, 223, 233, 235, 239, 281, 282	A050-1003-0	RES CARBON FILM, 10KΩ, 1/8W, 5%	7
R227	A050-1002-0	RES, CARBON FILM, 1KΩ, 1/8W, 5%	1
R229, 248	A051-2701-0	RES, CARBON FILM, 270Ω, 1/4W, 5%	2
R230, 246, 256	A050-1004-0	RES, CARBON FILM, 100KΩ, 1/8W, 5%	3
R242	A050-3302-0	RES, CARBON FILM, 3.3KΩ, 1/8W, 5%	1
R250	A050-4702-0	RES, CARBON FILM, 4.7KΩ, 1/8W, 5%	1
R252	A050-4703-0	RES, CARBON FILM, 47KΩ, 1/8W, 5%	1
R258	A051-4703-0	RES, CARBON FILM, 47KΩ, 1/4W, 5%	1
R263, 265	A050-2205-0	RES CARBON FILM, 2.2MΩ, 1/8W, 5%	2
R283	A050-1001-0	RES, CARBON FILM, 100Ω, 1/8W/ 5%	1

Miscellaneous

T209	A080-0006-A	TRANSFORMER STANDBY, 120/10@.09A, PCB	1
K206	A084-0002-0	RELAY, 12VDC, 1A, 15AMP/125VAC, TV-8, PCB	1
S219	A090-007-0	SWITCH, 8A/128A, 250V, PP, PCB	1
F203	A091-0023-0	FUSE, 1/4, 10A, 250V, FAST, CERAMIC ACG	1
F208	A091-0000-0	FUSE, 5 x 20mm, .5A, 250V, SLO BLO	1
	HA206-0001-B	Loaded PA5800 Power Switch Board	1
J284	A092-0019-0	JACK, PHONE, 3.5MM, S-TIP, O-SLEV, VERT PC	1
P221	A093-0043-0	HDR, 2MMX3, VERT, MALE LOCK	1
P237	A093-0151-0	HDR, 2MMX5, VERT, MALE, LOCKING	1
P260	A093-0026-0	HDR, .1X3, HORIZ, MALE, SQUARE PIN, TIN	1
P271	A093-0526-0	HDR, .1X3. BOTTOM ENTRY, 093-0026 MATE	1
P280	A093-0044-0	HDR, 2MMX3, HORIZ, MALE LOCK	1
FUSE CLIP	A094-0004-0	FUSE CLIP, 5MM, PC MOUNT	2
FUSE CLIP	A094-0015-0	FUSE CLIP, PC MOUNT, .250, 15A	2

POWER AMP BOARD

Transistors			
Q14A, 14B, 14C, 14D, 14E, 18A, 18B, 18C, 18D, 18E	A010-0010-0	2SC2240, NPN, 120V, 100MA, TO-92	10
Q23A, 23B, 23C, 23D, 23E, 24A, 24B, 24C, 24D, 24E	A010-0012-0	MPSA06, NPN, 80V, 500MA, TO-92	10
Q30A, 30B, 30C, 30D, 30E, 37A, 37B, 37C, 37D, 37E	A010-1010-0	2SA970, PNP, 120V, 100MA, TO-92	10
Q46A, 46B, 46C, 46D, 46E, 64A, 64B, 64C, 64D, 64E, 79A, 79B, 79C, 79D, 79E	A010-0001-0	2SC3478, NPN, 180V, 100MA	15
Q69A, 69B, 69C, 69D, 69E, 82A, 82B, 82C, 82D, 82E	A010-1002-0	2SA1376, PNP, 180V, 100MA, TO-92	10
Q88A, 88B, 88C, 88D, 88E, 89A, 89B, 89C, 89D, 89E	A012-0002-0	2SC4793, NPN, 200V, 1.5A, 2-10R1A	10
Q91A, 91B, 91C, 91D, 91E	A012-1002-0	2SA1837, PNP, 200V, 1.5A, 2-110R1A	5
Q98A, 98B, 98C, 98D, 98E, 99A, 99B, 99C, 99D, 99E	A012-0003-0	2SC5242, NPN, 230V, 15A, 2-16C1A	10
Q100A, 100B, 100C, 100D, 100E, 101A, 101B, 101C, 101D, 101E	A012-1003-0	2SA1962, PNP, 230V, 15A, 2-16C1A	10
Q121	A010-1013-0	MPSA56, PNP, 80V, 500MA, TO-92	1
Diodes			
D31A-E, D33A-E, D41A-E, D80A-E, D81A-E	A020-1000-0	1N4148, REST-FAST, 200MA, 100V, 4NS, DO-35	25
D90A, 90B, 90C, 90D, 90E, 92A, 92B, 92C, 92D, 92E	A020-2106-0	1N4004, RECT, 1A, 150V, DO-41	10
BR53A, 53B, 53C, 53D, 53E	A023-0004-0	BRIDGE, 8A, 200V, VERT, PC	5

Reference #	Part #	Description	Quantity
Capacitors			
C6A-E, C7A-E, C12A-E	A030-2271-0	CAP, CER AXIAL, 2700pf, 10%, 50V, NPO	15
C9A, 9B, 9C, 9D, 9E	A032-4104-0	CAP, PE, .1μF, 10%, 100V	15
C17A-E, C49A-E, C50A-E	A031-3476-0	CAP, ELEC, RAD, 47μF, 20%, 63V	15
C22A-E	A031-0477-0	CAP, ELEC, RAD, 470μF, 20%, 10V	5
C26A, 26B, 26C, 26D, 26E, 27A, 27B, 27C, 27D, 27E	A031-2828-0	CAP, ELEC, RAD, 8200μF, 20%, 50V	10
C32A, 34B, 34C, 34D, 34E, 38A, 38B, 38C, 38D, 38E	A030-2102-0	CAP, CER, AX, .001μF, 10%, 50V, X7R	10
C44A, 44B, 44C, 44D, 44E, 71A, 71B, 71C, 71D, 71E	A031-2106-0	CAP, ELEC, RAD, 10μF, -10%+50%, 50V	10
C45A-E	A035-8150-0	CAP, MICA, 15PF, 5%, 500V	5
C51A, 51B, 51C, 51D, 51E, 52A, 52B, 52C, 52D, 52E	A030-4104-0	CAP, CER AXIAL, 2700pf, 10%, 100V, X7R	10
C56A-E, C57A-E, 124	A030-2104-0	CAP, CER, AX, .1μF, 10%, 50V, X7R	11
C67A-E	A035-8131-0	CAP, MICA, 130PF, 5%, 500V	5
Resistors			
R2A-E	A050-1004-0	RES, CARBON FILM, 100KΩ, 1/8W, 5%	5
R3A-E	A060-1242-0	RES, METAL FILM, 1.24K, 1/8W, 1%	5
R8A, 8B, 8C, 8D, 8E	A055-0510-0	RES, METAL OXIDE, 5.1Ω, 2W, 5%	5
R10A, 10B, 10C, 10D, 10E	A055-0101-0	RES, METAL OXIDE, 10Ω, 2W, 5%	5
R11A, 11B, 11C, 11D, 11E, 43D, 43E	A050-3303-0	RES, CARBON FILM, 33KΩ, 1/8W, 5%	7
R13A-E, R16A-E, R20A-E, R72A-E	A050-1002-0	RES, CARBON FILM, 1KΩ, 1/8W, 5%	20
R21A-E	A050-1801-0	RES, CARBON FILM, 180Ω, 1/8W, 5%	5
R28A-E, R35A-E, 68A-E, 77A-E	A050-4701-0	RES, CARBON FILM, 470Ω, 1/8W, 5%	20
R29A-E, R15A-E, R19A-E, R36A-E, R63A-E, R76A-E, R95A-E	A050-1001-0	RES, CARBON FILM, 100Ω, 1/8W, 5%	35
R32A, 32B, 32C, 32D, 32E, 73A, 73B, 73C, 73D, 73E, 74A, 74B, 74C, 74D, 74E	A050-5602-0	RES, CARBON FILM, 5.6KΩ, 1/8W, 5%	15
R42A, 42B, 42C, 42D, 42E, 120	A050-3302-0	RES, CARBON FILM, 33KΩ, 1/8W, 55	6
R43A-E	A060-3323-0	RES, METAL FILM, 33.2KΩ, 1/8W, 1%	5
R48A, 48B, 48C, 48D, 48E, 85A, 85B, 85C, 85D, 85E	A055-6802-0	RES, METAL OXIDE, 6.8K, 2W, 5%	10
R54A, 54B, 54C, 54D, 54E, 55A, 55B, 55C, 55D, 55E, 93A, 93B, 93C, 93D, 93E, 96A, 96B, 96C, 96D, 96E	A050-0101-0	RES, CARBON FILM, 10Ω, 1/8W, 5%	20
R60A, 60B, 60C, 60D, 60E, 61A, 61B, 61C, 61D, 61E, 83A, 83B, 83C, 83D, 83E, 84A, 84B, 84C, 84D, 84E	A056-330-1	RES, WIRE WOUND, .33Ω, 3W, 5%	20
R62A-E, R66A-E	A050-2203-0	RES, CARBON FILM , 22KΩ, 1/8W, 5%	10
R65A-E	A050-2202-0	RES, CARBON FILM, 2.2KΩ, 1/8W, 5%	5
R70A, 70B, 70C, 70D, 70E	A070-0520-0	POT, 500Ω TRIM, .375 ROUND, SLOT, .5W	5
R78A-E	A050-1202-0	RES, CARBON FILM, 1.2KΩ, 1/8W, 5%	5
R87A-E, R102A-E, D122	A050-4703-0	RES, CARBON FILM, 47KΩ, 1/8W, 5%	11
Miscellaneous			
L94A, 94B, 94C, 94D, 94E, 97A, 97B, 97C, 97D, 97E	A081-0057-0	INDUCTOR, 2UH, 7A, 2743002112 FERRITE BEAD	10
FUSE	A091-0019-0	FUSE, 5MM, 5A, 250V, SLB, UL, SEMKO	10
FUSE CLIP	A094-0004-0	FUSE CLIP, 5MM, PC MOUNT	10
TH127	A091-1002-0	THRM BRKR 105C +/-5, 0-DIFF, PC	1
	A091-1003-0	THRM BRKR 100C +/-5, 0-DIFF, PC	1
J5A, 5B, 5C, 5D, 5E	A092-0018-0	BINDING POST, X2, H, PC, NI	5
J1A, 1B, 1C, 1D, 1E	A092-0031-0	JACK, RCAX1, H, PC, GOLD, WT	5
P75A, 75B, 75C, 75D, 75E	A093-0025-0	HDR, .1X2, VERT, MALE, LOCK, GOLD	5
P86A, 86B, 86C, 86D, 86E	A093-0080-0	HDR, .156X3, VERT, MALE, LOCK, SQR PINS, TIN	5
P123	A093-0151-0	HDR, 2MMX5, VERT, MALE, LOCKING	1
RL47A, 47B, 47C, 47D, 47E	A081-0032-0	INDUCTOR .4 UH WITH 1Ω 2W RESISTOR	5
	HA206-000-C	LOADED PA5800 AMPLIFIER BOARD	1

Signature 2.1 ELECTRICAL PARTS LIST

Power Amplifier Board

Transistors

Reference #	Part #	Description	Quantity
Q1, 14, 33, 55, 77, 99	A010-1013-0	MPSA56 PNP 80V 500MA TO-92	6
Q2, 16, 17, 29, 31, 32, 51, 53, 54, 73, 75, 76, 95, 97, 98	A010-0001-0	2SC3478, NPN, 180V, 100MA	15
Q3, 5, 7, 37, 38, 39, 59, 60, 61, 81, 82, 83, 103, 104, 105	A012-1003-0	2SA1962, PNP, 230V, 15A, 2-16C1A	15
Q4, 6, 8, 40, 41, 42, 62, 63, 64, 84, 85, 86, 106, 107, 108	A012-0003-0	2SC5242, NPN, 230V, 15A, 2-16C1A	15
Q10, 11, 24, 25, 46, 47, 68, 69, 90, 91	A012-0002-0	2SC4793 NPN 200V 1.5A 2-10R1A	10
Q12, 18, 19, 34, 35, 36, 56, 57, 58, 78, 79, 80, 100, 101, 102	A010-1002-0	2SA1376, PNP, 180V, 100MA, TO-92	15
Q15, 43, 65, 87, 109	A010-1003-0	2SA1380-F, PNP, 200V, 100MA, TO-126	5
Q13, 44, 66, 88, 110	A010-0003-0	2SC3502-F, NPN, 200V, 100MA, TO-126	5
Q20, 23, 27, 28, 49, 50, 71, 72, 93, 94	A010-0012-0	MPSA06 NPN 80V 500MA TO-92	10
Q21, 22, 30, 45, 52, 67, 74, 89, 96, 111	A010-0010-0	2SC2240, NPN, 120V, 100MA, TO-92	10

Diodes

D1, 4, 5, 6, 7, 10, 11, 12, 13, 14, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 31, 32, 33, 34, 35	A020-1000-0	1N4148, RECT-FAST, 200MA, 100V, 4NS	25
D2, 3, 8, 9, 15, 16, 22, 23, 29, 30	A020-2106-0	1N4004, RECT, 1A, 150V, DO-41	10
BR1, 2, 3, 4, 5	A023-0004-0	BRIDGE, 8A, 200V, VERT, PC	5
	A025-0012-0	LED, RED/, 5MM, 630NM/560NM, 15MCD	1

Capacitors

C1	A030-2104-0	CAP, CER, AX, .1μF, 10%, 50V, X7R	1
C2, 3, 30, 31, 51, 52, 72, 73, 93, 94	A031-3129-0	CAP, ELEC, RAD, 12000μF, 20%, 63V	10
C4, 6, 7, 8, 40, 41, 42, 43, 61, 62, 63, 64, 82, 83, 84, 85, 103, 104, 105, 106	A030-4104-0	CAP, CER AXIAL, .1μF, 10%, 100V, X7R	20
C5, 10, 32, 33, 53, 54, 74, 75, 95, 96	A031-2106-0	CAP, ELEC, RAD, 10μF, -10%+50%, 50V	10
C9, 27, 48, 69, 90	A035-8271-0	CAP, PE/MICA, 2700pf, 5%, 100/500V	5
C11, 15, 24, 26 45, 47, 66, 68, 87, 89	A031-3476-0	CAP, ELEC, RAD, 47μF, 20%, 63V	10
C12, 28, 49, 70, 91	A035-8100-0	CAP, MICA, 10pf, 5%, 500V	5
C13, 14, 34, 37, 55, 56, 76, 79, 97, 100	A030-2102-0	CAP, CER, AX, .001μF, 10%, 50V, X7R	10
C16, 17, 23, 25, 44, 46, 65, 67, 86, 88	A031-0477-0	CAP, ELEC, RAD, 470μF, 20%, 10V	10
C18, 29, 50, 71, 92	A032-4104-0	CAP, PE, .1μF, 10%, 100V	5
C19, 20, 21, 35, 36, 38, 56, 57, 59, 77, 78, 80, 98, 99, 101	A030-2271-0	CAP, CER AXIAL, 2700pf, 10%, 50V, NPO	15

Resistors

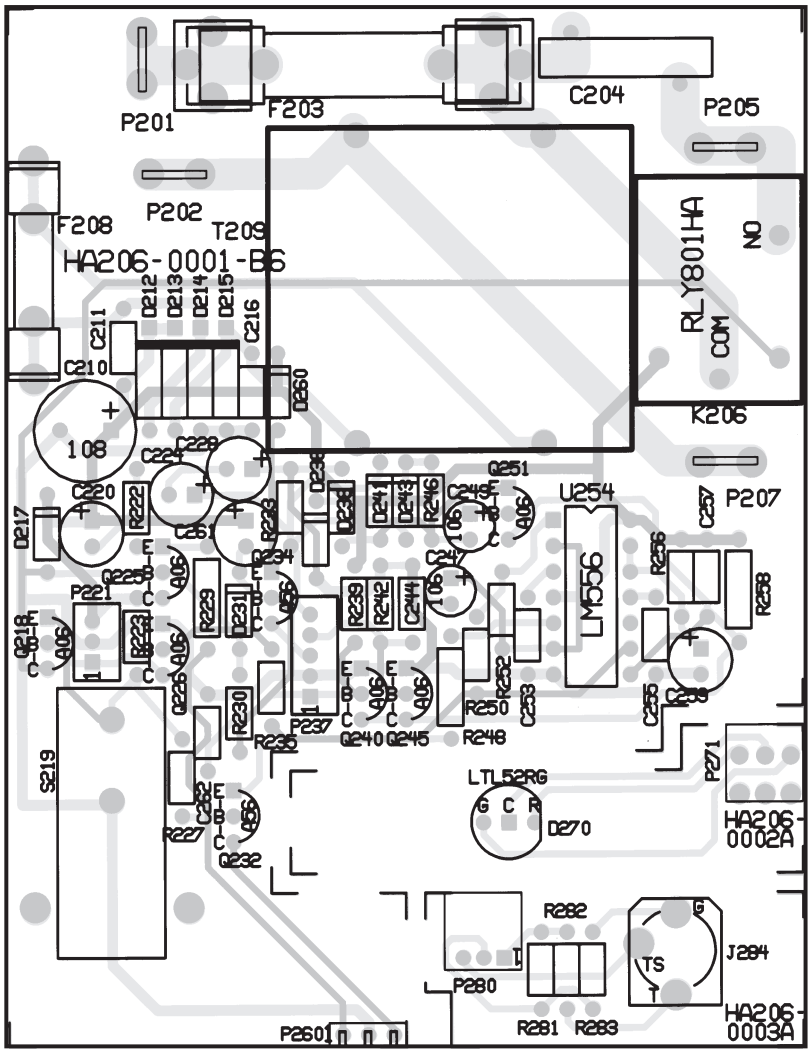
R1, 10, 18, 20 21, 44, 47, 71, 72, 76, 77, 78, 79, 119, 120, 124, 125, 126, 127, 167, 168, 172, 173, 174, 175, 215, 216, 220, 221, 222, 223	A050-1001-0	RES, CARBON FILM, 100 OHM, 1/8W, 5%	31
R2, 3, 11, 24, 28 67, 68, 74, 115, 116, 122, 163, 164, 170, 211, 212, 218	A050-1003-0	RES, CARBON FILM, 10K OHM, 1/8W, 5%	17
R4	A050-3302-0	RES, CARBON FILM, 3.3K OHM, 1/8W, 5%	1
R5, 7, 12, 43, 61, 62, 73, 109, 110, 121, 157, 158, 169, 205, 206, 217	A050-4703-0	RES, CARBON FILM, 47K OHM, 1/8W, 5%	16
R6, 99, 147, 195, 243	A055-0101-0	RES, METAL OXIDE, 10 OHM, 2W, 5%	5
R8, 9, 100, 101 148, 149, 196, 197, 244, 245	A055-6802-0	RES, METAL OXIDE, 6.8K, 2W, 5%	10
R13, 14, 15, 16, 17, 18, 54, 56, 57, 58, 59, 60, 102, 104, 105, 106, 107, 108, 150, 152, 153, 154, 155, 156, 198, 200, 201, 202, 203, 204	A054-.220-0	RES, WIRE WOUND, .22 OHM, 1W, %5	30
R23, 27, 45, 48, 50, 64, 83, 84, 85, 86, 112, 131, 132, 133, 134, 160, 179, 180, 181, 182, 208, 227, 228, 229, 230	A050-1002-0	RES, CARBON FILM, 1K OHM, 1/8W, 5%	25
R25, 89, 137, 185, 233	A050-7500-0	RES, CARBON FILM, 75 OHM, 1/8W, 5%	5

Reference #	Part #	Description	Quantity
R26, 75, 123, 171, 219	A050-5602-0	RES, CARBON FILM, 5.6K OHM, 1/8W, 5%	5
R29, 38, 65, 66, 113, 114, 161, 162, 209, 210	A050-0471-0	RES, CARBON FILM, 47 OHM, 1/8W, 5%	10
R30, 63, 111, 159, 207	A050-1202-0	RES, CARBON FILM, 1.2K OHM, 1/8, 5%	5
R31, 32, 33, 34, 35, 36, 90, 91, 92, 93, 94, 95, 138, 139, 140, 141, 142, 143, 186, 187, 188, 189, 190, 191, 234, 235, 236, 237, 238, 239	A050-4701-0	RES, CARBON FILM, 470 OHM, 1/8W, 5%	30
R37, 41, 69, 70, 117, 118, 165, 166, 213, 214	A050-0101-0	RES, CARBON FILM, 10 OHM, 1/8W, 5%	10
R39, 98, 146, 194, 242	A055-0510-0	RES, METAL OXIDE, 5.1 OHM, 2W, 5%	5
R40, 51, 87, 88, 135, 136, 183, 184, 231, 232	A060-3323-0	RES, METAL FILM, 33.2K OHM, 1/8W, 1%	10
R42, 46, 49, 80, 81, 82, 128, 129, 130, 176, 177, 178, 224, 225, 226	A050-1801-0	RES, CARBON FILM, 180 OHM, 1/8, 5%	15
R52, 96, 144, 192, 240	A060-1072-0	RES, METAL FILM, 1.07K OHM, 1/8W, 1%	5
R53, 97, 145, 193, 241	A050-1004-0	RES, CARBON FILM, 100K OHM, 1/8W, 5%	5
R22, 55, 193, 151, 199	A070-0520-0	POT, 500 OHM TRIM, .375 ROUND, SLOT,	5
Miscellaneous			
F1-10	A091-0008-0	5A Fast-blo GMA 5 x 20mm Fuse	10
TH1	A091-1003-0	BRKR 100C +/-5, 0-DIFF, PC	1
J2, 5, 7, 9, 11	A092-0012-0	BINDING POST, X2, H, PC, GOLD, GALLIEN	5
J3, 4, 6, 8, 10	A092-0032-0	JACK, RCAX1, H, GOLD, WT, SWITCH T/S	5
P2, 4, 6, 8, 10	A093-0025-0	HDR, .1X2, VERT, MALE, LOCK, GOLD	5
P1, 5, 7, 9, 11	A093-0080-0	HDR, .156X3, VERT, MALE, LOCK, SQR PIN	5
RL1, 2, 3, 4, 5	A081-0032-0	INDUCTOR, .4 UH WITH 1 OHM 2W RESI	5
L1, 2, 3, 4, 5, 6, 7, 8, 9, 10	A081-0057-0	INDUCTOR, 2UH, 7A, 2743002112 FERRIT	10
	A093-2005-0	HDR, 2MMX7, VERT, SHROUDED	1
	A094-0004-0	FUSE CLIP, 5MM, P.C. MOUNT	10
	105-0007-0	INSULATOR TUBE	1
	153-0105-0	LABEL, BLANK, .9"X.25"	1
	HA206-0002-B	LOADED 2.1 AMPLIFIER BOARD	1

Power Switch/Indicator Board

Reference #	Part #	Description	Quantity
Integrated Circuits			
U1	A001-0005-0	LM393N, DUAL , 8 PIN DI, COMPARATOR	1
U2	A001-2009-0	LM556CN DUAL TIMER	1
Transistors			
Q2, 3, 4, 7, 8	A010-0012-0	MPSA06 NPN 80V 500MA TO-92	5
Q1, 5, 6	A010-1013-0	MPSA56 80V 500MA TO-92	3
Diodes			
D1, 2, 3, 4, 7	A020-2106-0	1N4004, RECT, 1A, 150V, DO-41	5
D5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 27	A020-1000-0	1N4148, RECT-FAST, 200MA, 100V, 4NS,	12
D17, 18, 19, 20, 21, 22, 23, 24, 25	A025-0030-0	LED, BLUE, T1, .190, 470NM, SMALL	9
D26	A025-0012-0	LED, RED/, 5MM, 630NM/560NM, 15MCD	1
D28	A020-0004-0	1N755A, 7.5V, 500MW, DO-35, ZENER	1
Capacitors			
C1	A034-7103-0	CAP, CERAMIC DISK, .01µF, 10%, X-250V	1
C2, 3, 5, 9, 11	A030-2104-0	CAP, CER, AX, .1µF, 10%, 50V, X7R	5
C4	A031-0108-0	CAP, , RAD, 1000µF, -10%+50%, 16V	1
C6, 7, 8, 12	A031-0107-0	CAP, ELEC, RAD,100µF,+/-20%,16V,LOW L	4
C10	A031-0106-1	CAP, , RAD, 10µF, 20%, 25V, NP	1
C13, 14	A030-2103-0	CAP, CER, AX, .01µF, 10%, 50V, X7R	2
Resistor			
R1, 2, 5, 9, 10, 15, 18, 20, 22	A050-1003-0	RES, CARBON FILM, 10K OHM, 1/8W, 5%	9
R3, 4, 6, 19	A050-1004-0	RES, CARBON FILM, 100K OHM, 1/8W, 5%	4
R8, 13	A050-4703-0	RES, CARBON FILM, 47K OHM, 1/8W, 5%	2
R11, 12	A050-4702-0	RES, CARBON FILM, 4.7K OHM, 1/8W, 5%	2
R14	A050-0750-0	RES, CARBON FILM, 7.5 OHM, 1/8W, 5%	1
R16	A051-2202-0	RES, CARBON FILM, 2.2K OHM, 1/4W, 5%	1
R17	A051-1502-0	RES, CARBON FILM, 1.5K OHM, 1/4W, 5%	1
R21	A050-1005-0	RES, CARBON FILM, 1M OHM, 1/8W, 5%	1
Miscellaneous			
F1	A091-0011-0	10A Fast-blo GMA 5 x 20mm FUSE	1
F2	A091-0007-0	.5A Slo-blo GMA 5 x 20mm FUSE	1
	A080-0002-A	TRANSFORMER STANDBY, 120V 10V@.35A	1
J1	A092-0022-0	JACK, PHONE, 3.5MM, H, PC	1
K1, 2	A084-0001-0	RELAY 12VDC, 20A/125VAC, TV-10	2
P1, 3, 4	A092-0010-0	FASTON, M, PC, .25"	3
P2	A092-0024-0	FASTON, M, PC, .187"	1
P5, 6	A093-0051-0	, 2MMX2, VERT, MALE, LOCK	2
S2	A093-0151-0	, 2MMX5, VERT, MALE, LOCKING	1
S1	A093-2005-0	, 2MMX7, VERT, SHROUDED	1
S3	A090-0007-0	SWITCH, 8A/128A, 250V, PP, PCB	1
S4	A093-0049-0	, 2MMX5, HORIZ, MALE, LOCK	1
	A094-0004-0	FUSE CLIP, 5MM, P.C. MOUNT	4
	A022-3001-0	THERMISTOR, 120 OHM, 2AMP, CL-90	1
	HA206-0003-B	LOADED SIG 2.1 POWER SWITCH BOARD	1

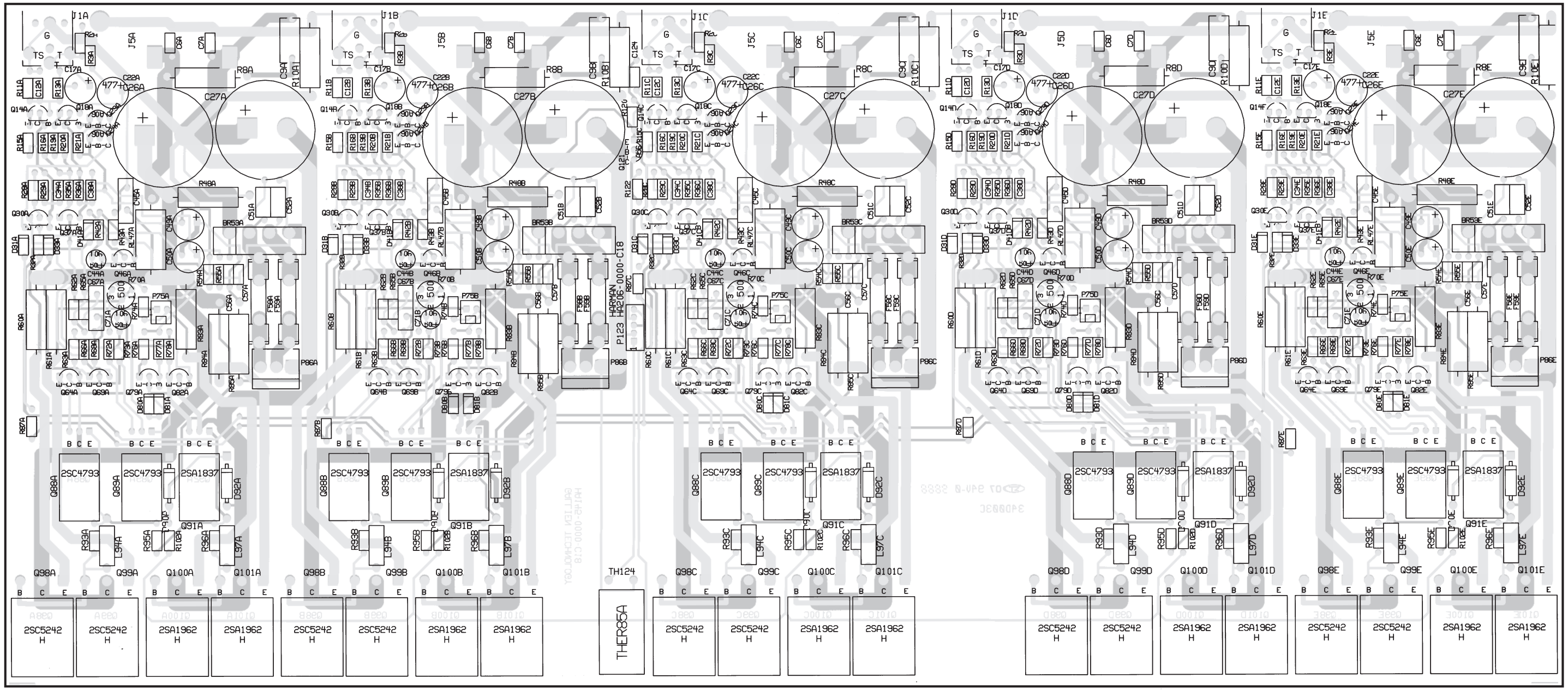
PA5800 POWER SWITCH PCB



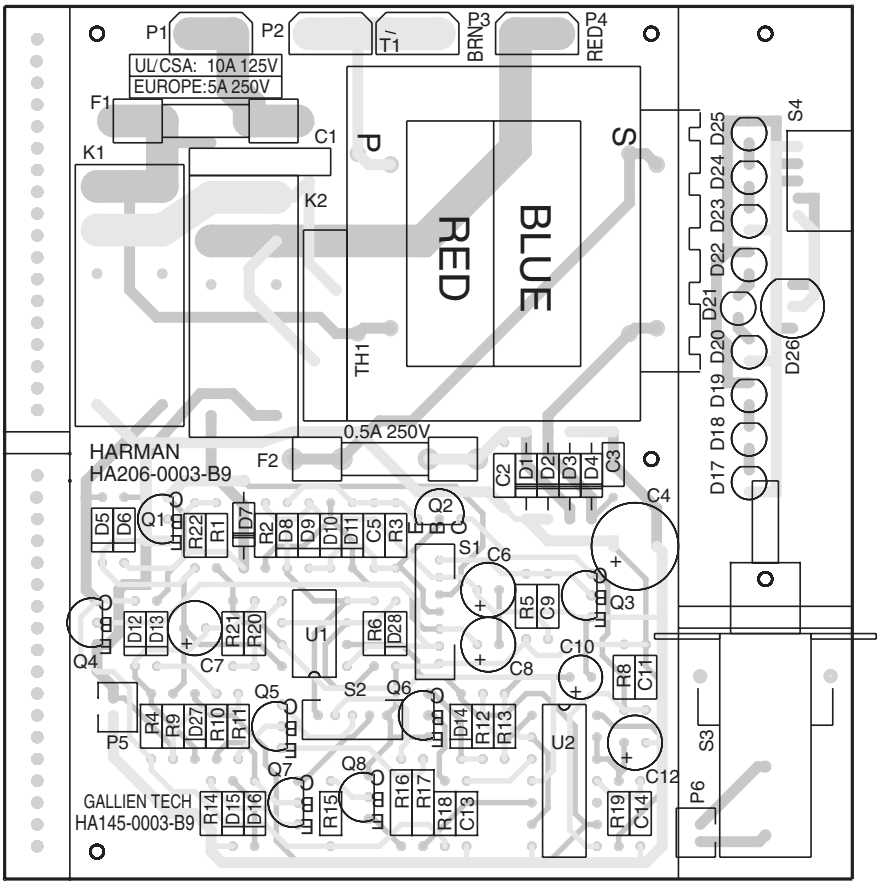
PA5800 POWER SWITCH/
INDICATOR BOARD

HA145-0001-B6

PA5800 POWER AMPLIFIER PCB

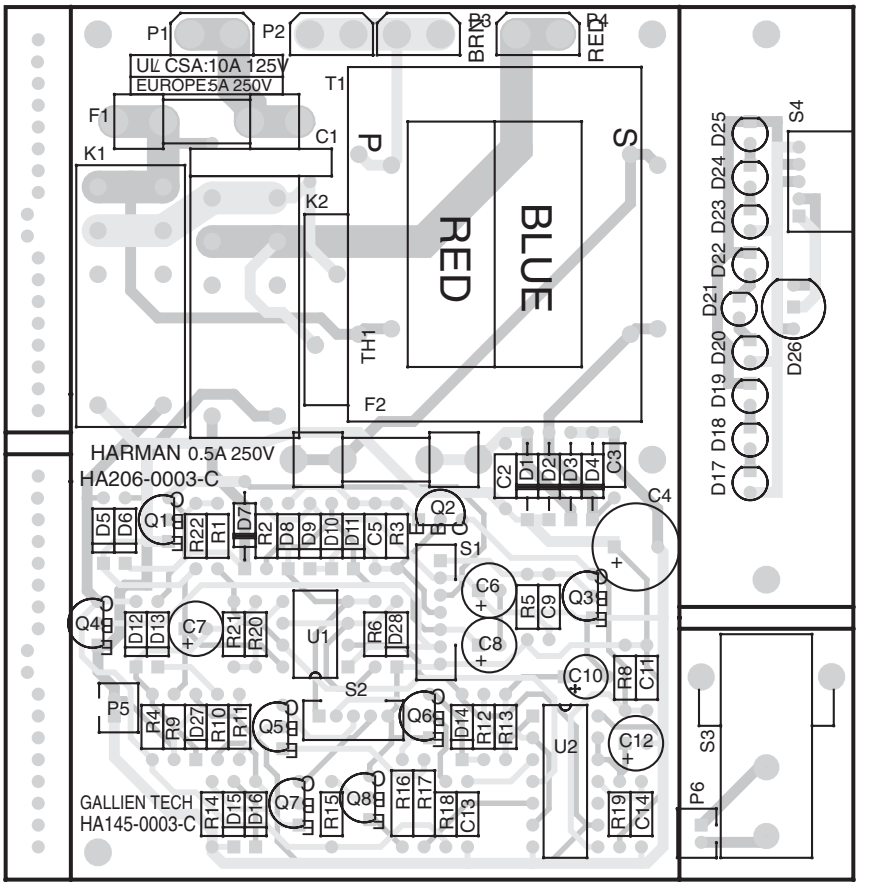


Signature 2.1 POWER SWITCH/INDICATOR PCB Rev B9 & D



SIG 2.1 POWER SWITCH/
INDICATOR BOARD
REV. B9

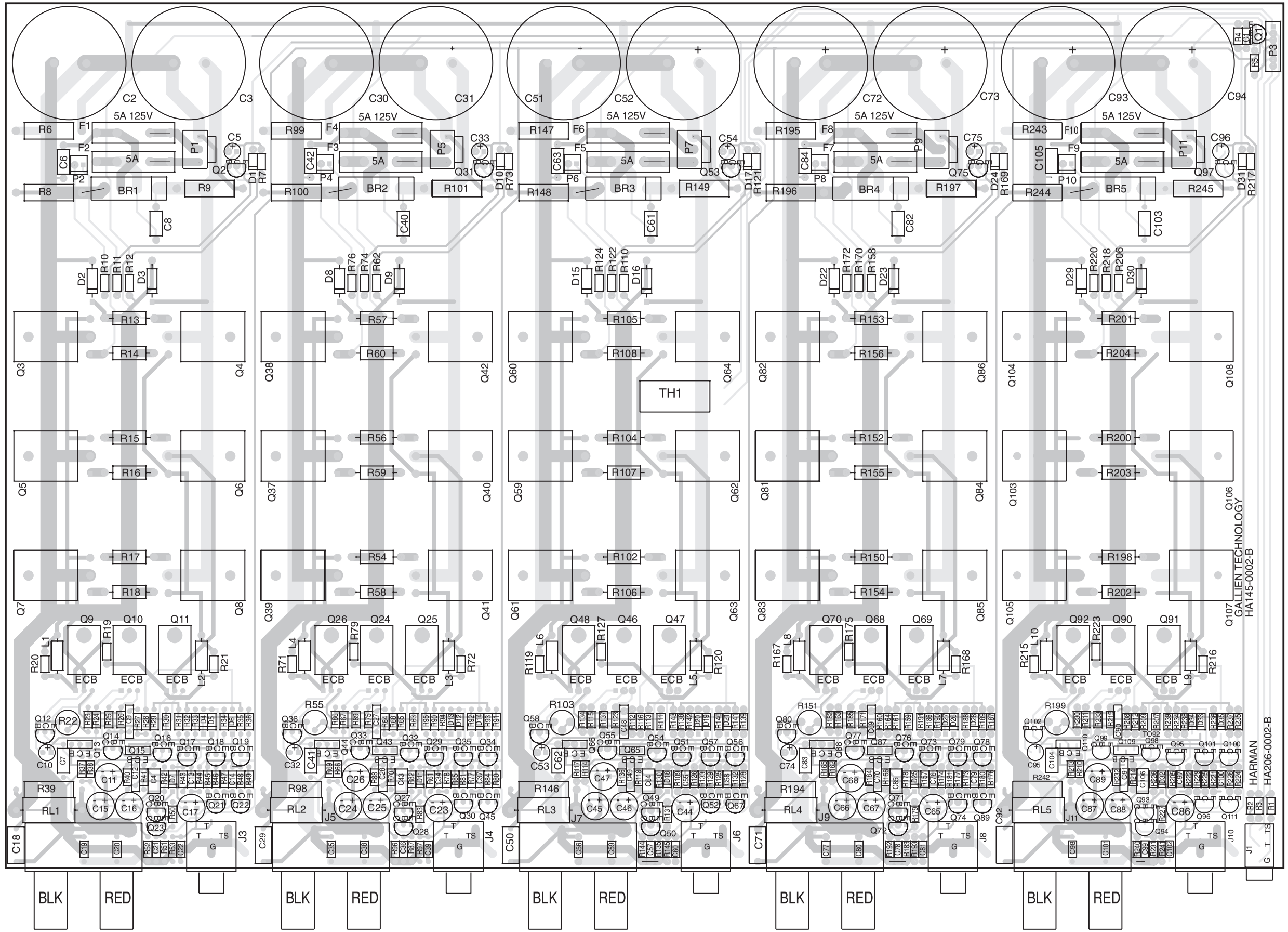
HA405-0003-B9



SIG 2.1 POWER SWITCH/
INDICATOR BOARD
REV. D

HA145-0003-D

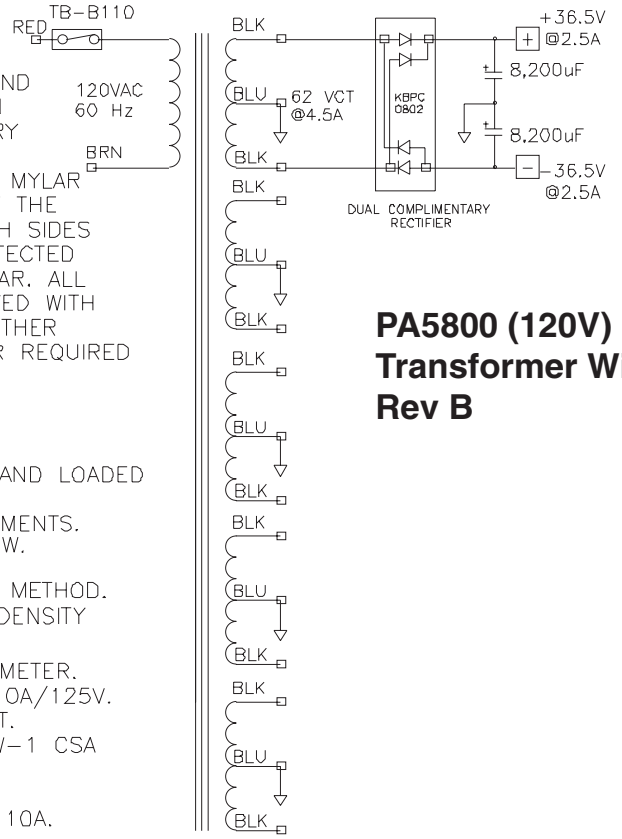
Signature 2.1 POWER AMPLIFIER PCB



PA5800 (120V) TRANSFORMER WIRING REV B

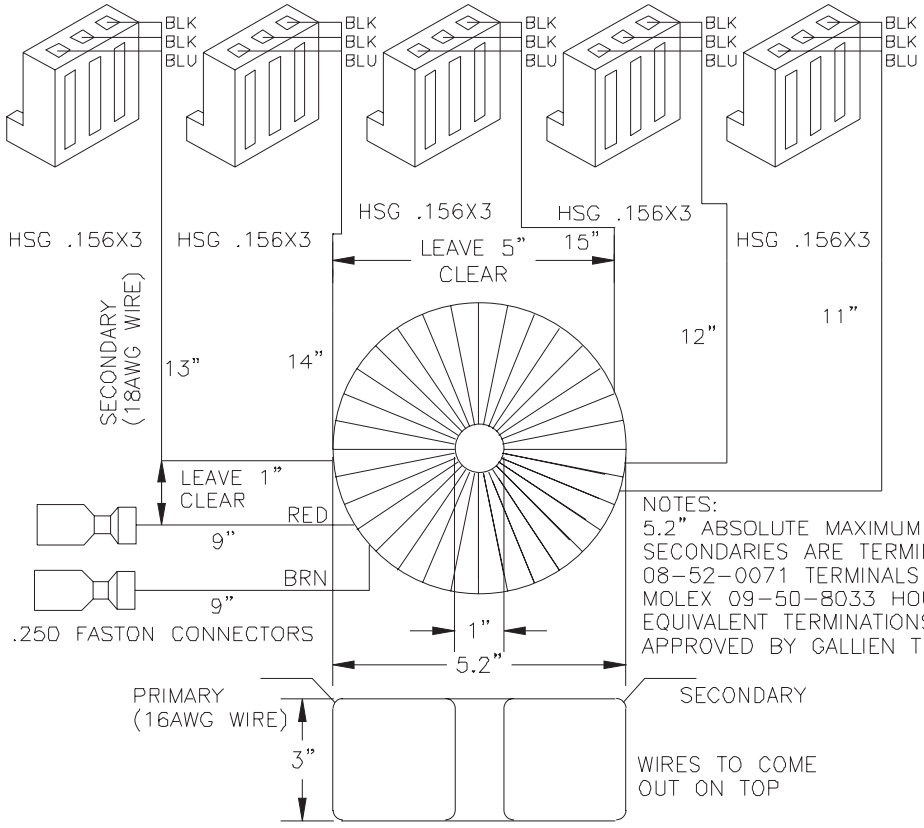
VERY IMPORTANT

THIS TRANSFORMER MUST BE BUILT TO UL1411 SPECIFICATIONS. 5MM CREEPAGE AND THREE LAYERS OF .7MM MYLAR INSULATION MUST BE MAINTAINED BETWEEN ALL PRIMARY AND SECONDARY WINDINGS.
ALL LEAD WIRES MUST BE GLUED TO 4MM MYLAR BASE THAT IS LARGE ENOUGH TO PROTECT THE SOLDER JOINTS. FOR PRIMARY LEADS, BOTH SIDES OF THIS TERMINATION BASE MUST BE PROTECTED WITH AN ADDITIONAL LAYER OF .18MM MYLAR. ALL PRIMARY MAG WIRE LEADS MUST BE SLEEVED WITH .4MM INSULATION TO TERMINATION BASE. OTHER CONSTRUCTION METHODS MAY BE USED OR REQUIRED TO INSURE COMPLIANCE.



PA5800 (120V)
Transformer Wiring
Rev B

NOTES:
1. APPLICATION AUDIO AMPIFIER.
2. ALL FIVE SECONDARIES ARE IDENTICAL AND LOADED AS SHOWN ABOVE.
3. DRAWING SHOWS FULL POWER REQUIREMENTS. VA AT FULL POWER IS EQUAL TO 1375W. DESIGN FOR LESS THAN 70°C RISE AT 458W (RATED POWER), UL RESISTANCE METHOD.
4. CORE TO BE IMPREGNATED AND FLUX DENSITY MUST BE LESS THAN 12,000 GAUSS.
5. MECHANICAL NOISE INAUDIBLE AT ONE METER.
6. 110°C THERMAL BREAKER RATED FOR 10A/125V.
7. EXTERIOR WRAPPING TAPE TRANSLUCENT.
8. ALL LEAD WIRE TO MEET AWN 1015 VW-1 CSA TEW 105°C, 600V.
9. TEMP CUTOUT EQUIV TO PEPI B 110°C RESETTABLE WITH < 12°C DERATING AT 10A.



NOTES:
5.2" ABSOLUTE MAXIMUM DIAMETER.
SECONDARIES ARE TERMINATED WITH MOLEX 08-52-0071 TERMINALS AND MOLEX 09-50-8033 HOUSINGS.
EQUIVALENT TERMINATIONS ARE ACCEPTABLE IF APPROVED BY GALLIEN TECHNOLOGY ENG. DEPT.

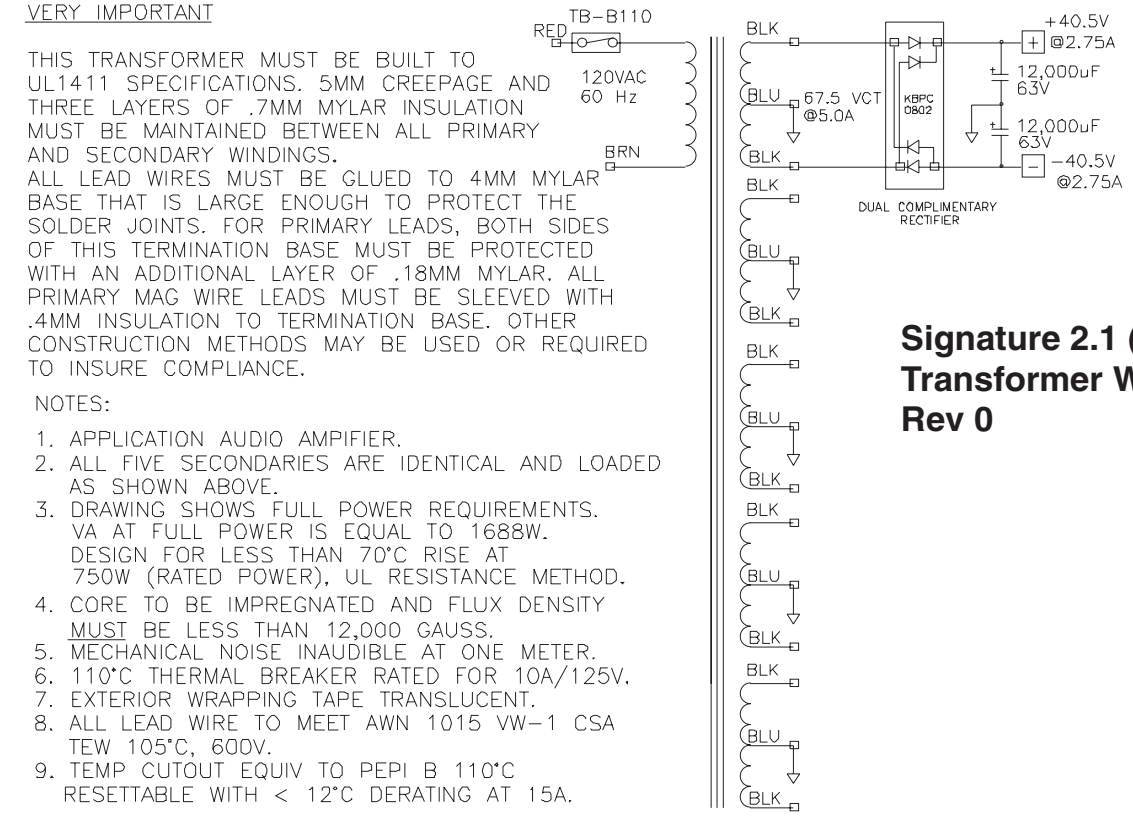
Signature 2.1 (120V) TRANSFORMER WIRING

VERY IMPORTANT

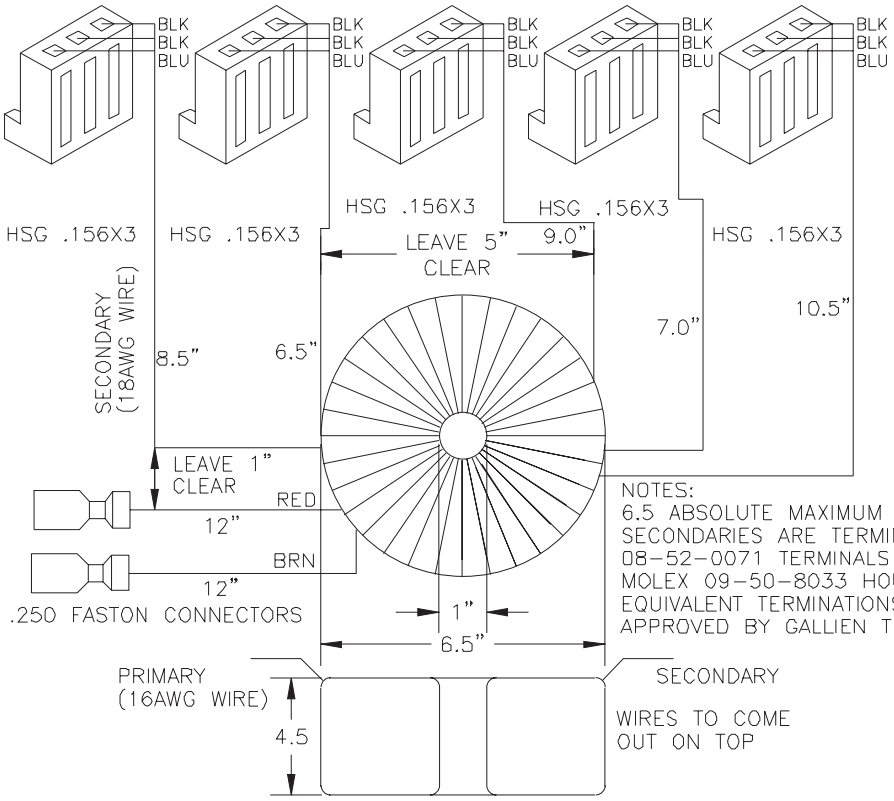
THIS TRANSFORMER MUST BE BUILT TO UL1411 SPECIFICATIONS. 5MM CREEPAGE AND THREE LAYERS OF .7MM MYLAR INSULATION MUST BE MAINTAINED BETWEEN ALL PRIMARY AND SECONDARY WINDINGS.
ALL LEAD WIRES MUST BE GLUED TO 4MM MYLAR BASE THAT IS LARGE ENOUGH TO PROTECT THE SOLDER JOINTS. FOR PRIMARY LEADS, BOTH SIDES OF THIS TERMINATION BASE MUST BE PROTECTED WITH AN ADDITIONAL LAYER OF .18MM MYLAR. ALL PRIMARY MAG WIRE LEADS MUST BE SLEEVED WITH .4MM INSULATION TO TERMINATION BASE. OTHER CONSTRUCTION METHODS MAY BE USED OR REQUIRED TO INSURE COMPLIANCE.

NOTES:

1. APPLICATION AUDIO AMPIFIER.
2. ALL FIVE SECONDARIES ARE IDENTICAL AND LOADED AS SHOWN ABOVE.
3. DRAWING SHOWS FULL POWER REQUIREMENTS. VA AT FULL POWER IS EQUAL TO 1688W. DESIGN FOR LESS THAN 70°C RISE AT 750W (RATED POWER), UL RESISTANCE METHOD.
4. CORE TO BE IMPREGNATED AND FLUX DENSITY MUST BE LESS THAN 12,000 GAUSS.
5. MECHANICAL NOISE INAUDIBLE AT ONE METER.
6. 110°C THERMAL BREAKER RATED FOR 10A/125V.
7. EXTERIOR WRAPPING TAPE TRANSLUCENT.
8. ALL LEAD WIRE TO MEET AWN 1015 VW-1 CSA TEW 105°C, 600V.
9. TEMP CUTOUT EQUIV TO PEPI B 110°C RESETTABLE WITH < 12°C DERATING AT 15A.

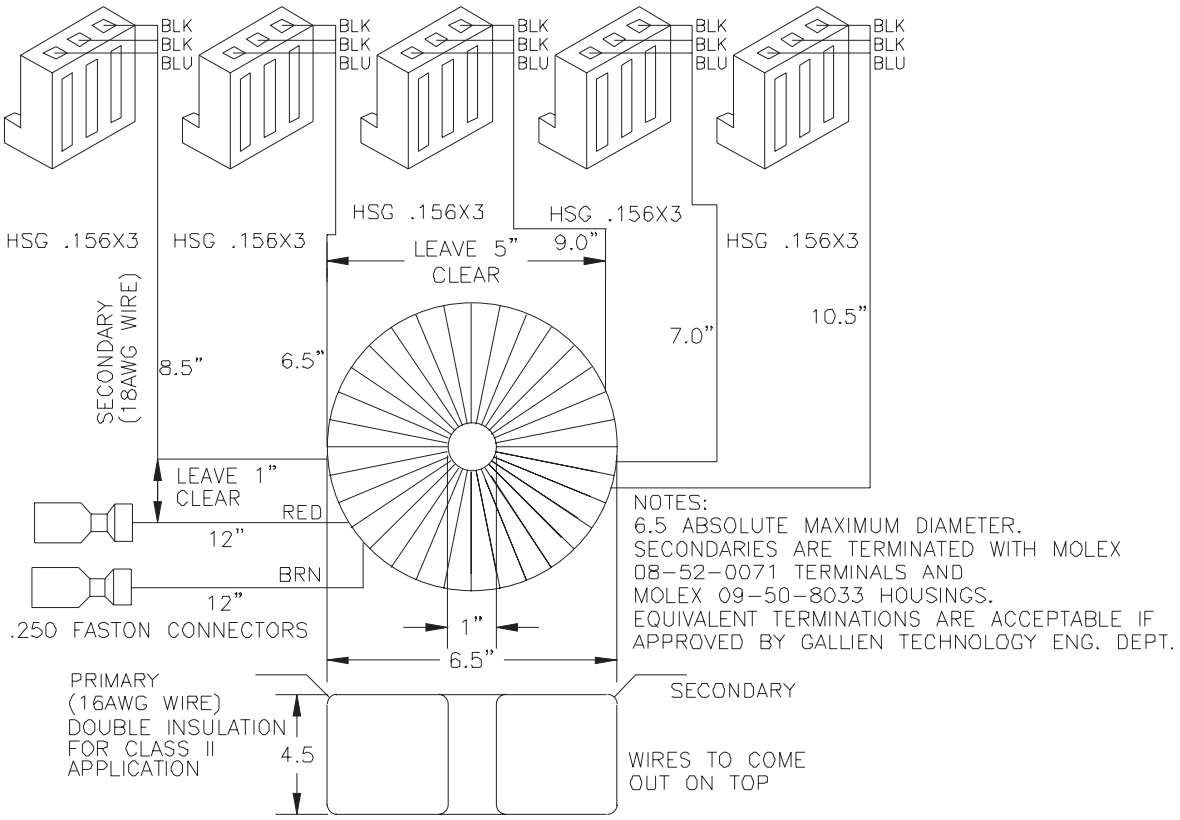


Signature 2.1 (120V)
Transformer Wiring
Rev 0



NOTES:
6.5 ABSOLUTE MAXIMUM DIAMETER.
SECONDARIES ARE TERMINATED WITH MOLEX 08-52-0071 TERMINALS AND MOLEX 09-50-8033 HOUSINGS.
EQUIVALENT TERMINATIONS ARE ACCEPTABLE IF APPROVED BY GALLIEN TECHNOLOGY ENG. DEPT.

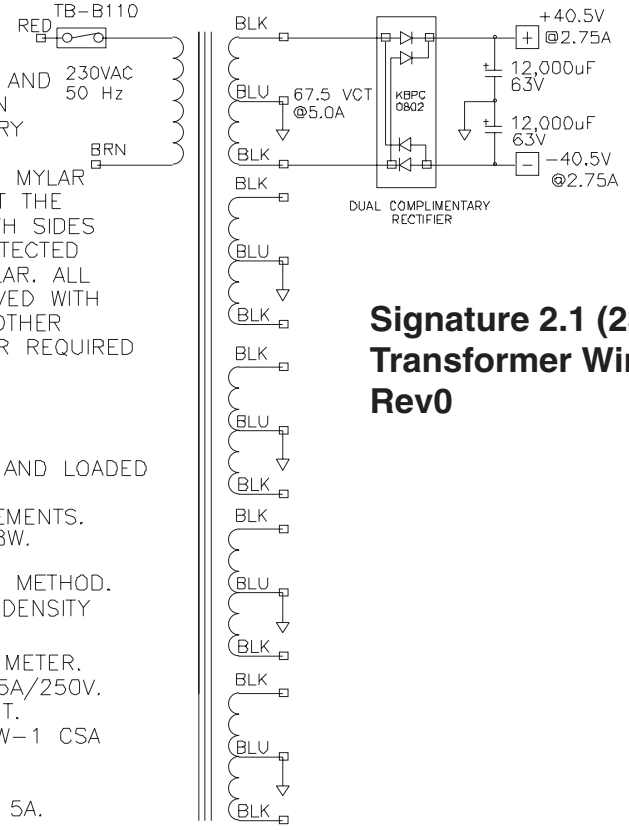
Signature 2.1 (230V) TRANSFORMER WIRING REV 0



NOTES:
6.5 ABSOLUTE MAXIMUM DIAMETER.
SECONDARIES ARE TERMINATED WITH MOLEX 08-52-0071 TERMINALS AND MOLEX 09-50-8033 HOUSINGS.
EQUIVALENT TERMINATIONS ARE ACCEPTABLE IF APPROVED BY GALLIEN TECHNOLOGY ENG. DEPT.

VERY IMPORTANT

THIS TRANSFORMER MUST BE BUILT TO EN60065 SPECIFICATIONS. 5MM CREEPAGE AND THREE LAYERS OF .7MM MYLAR INSULATION MUST BE MAINTAINED BETWEEN ALL PRIMARY AND SECONDARY WINDINGS.
ALL LEAD WIRES MUST BE GLUED TO 4MM MYLAR BASE THAT IS LARGE ENOUGH TO PROTECT THE SOLDER JOINTS. FOR PRIMARY LEADS, BOTH SIDES OF THIS TERMINATION BASE MUST BE PROTECTED WITH AN ADDITIONAL LAYER OF .18MM MYLAR. ALL PRIMARY MAG WIRE LEADS MUST BE SLEEVED WITH .4MM INSULATION TO TERMINATION BASE. OTHER CONSTRUCTION METHODS MAY BE USED OR REQUIRED TO INSURE COMPLIANCE.



Signature 2.1 (230V) Transformer Wiring Rev0

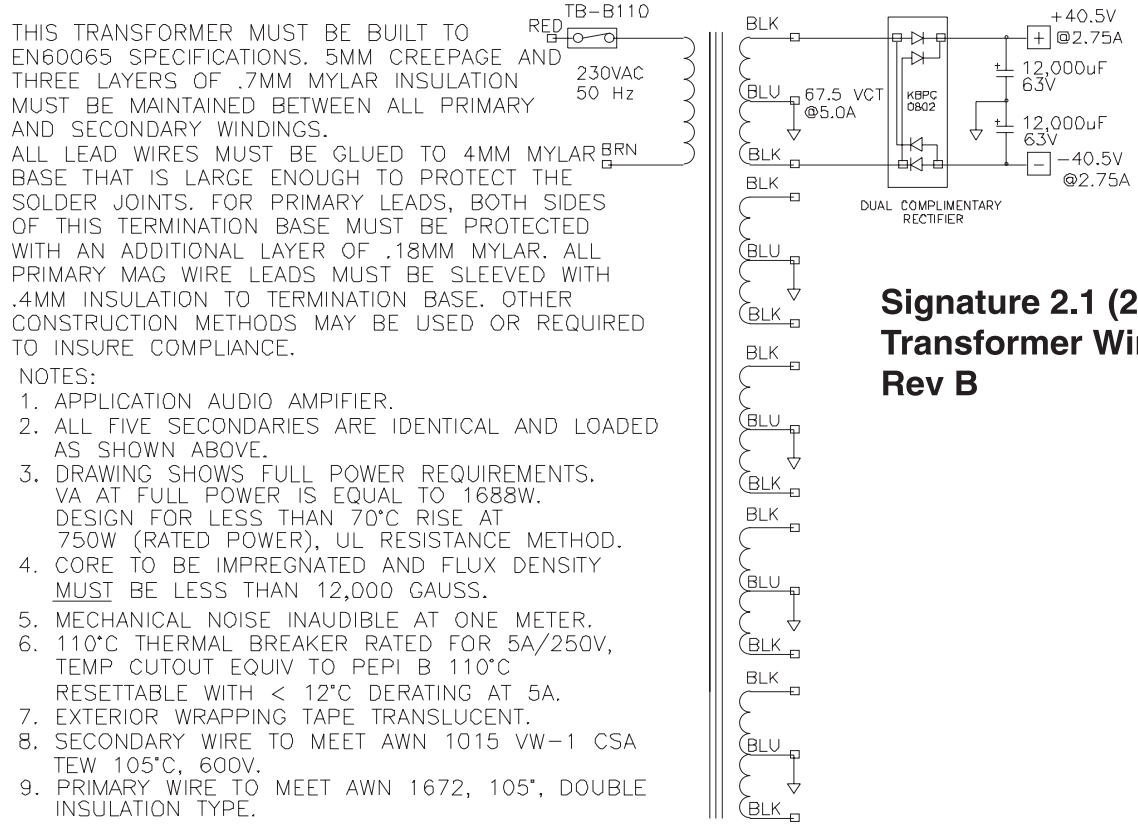
NOTES:
1. APPLICATION AUDIO AMPIFIER.
2. ALL FIVE SECONDARIES ARE IDENTICAL AND LOADED AS SHOWN ABOVE.
3. DRAWING SHOWS FULL POWER REQUIREMENTS. VA AT FULL POWER IS EQUAL TO 1688W. DESIGN FOR LESS THAN 70°C RISE AT 750W (RATED POWER), UL RESISTANCE METHOD.
4. CORE TO BE IMPREGNATED AND FLUX DENSITY MUST BE LESS THAN 12,000 GAUSS.
5. MECHANICAL NOISE INAUDIBLE AT ONE METER.
6. 110°C THERMAL BREAKER RATED FOR 5A/250V.
7. EXTERIOR WRAPPING TAPE TRANSLUCENT.
8. ALL LEAD WIRE TO MEET AWN 1015 VW-1 CSA TEW 105°C, 600V.
9. TEMP CUTOUT EQUIV TO PEPI B 110°C RESETTABLE WITH < 12°C DERATING AT 5A.

Signature 2.1 (230V) TRANSFORMER WIRING REV B

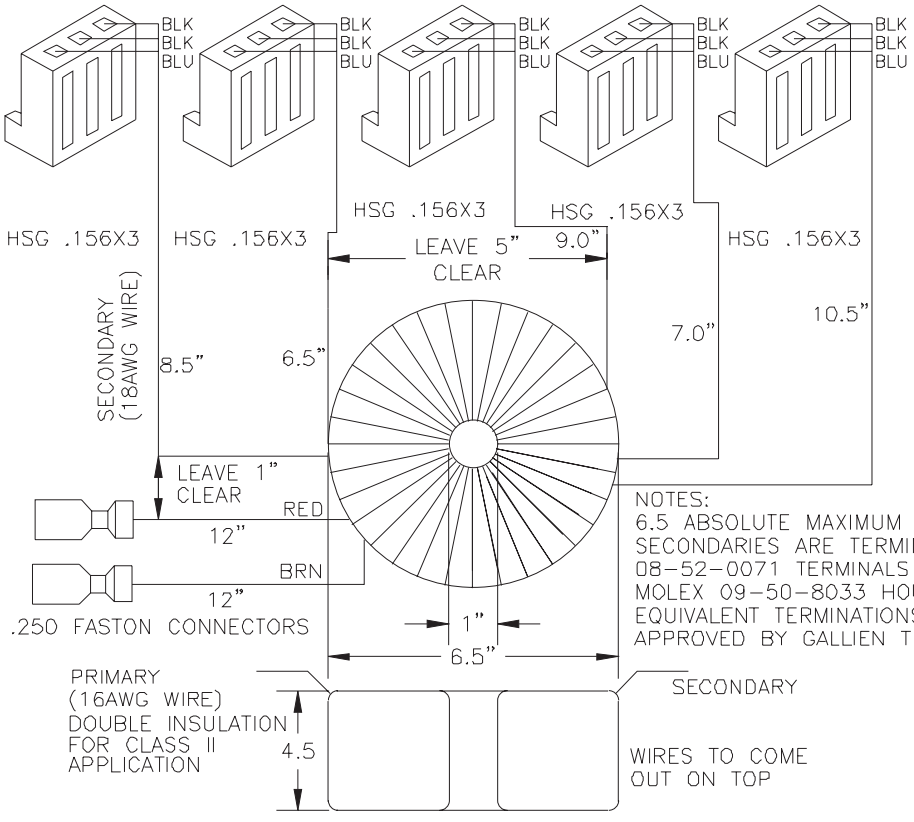
VERY IMPORTANT

THIS TRANSFORMER MUST BE BUILT TO EN60065 SPECIFICATIONS. 5MM CREEPAGE AND THREE LAYERS OF .7MM MYLAR INSULATION MUST BE MAINTAINED BETWEEN ALL PRIMARY AND SECONDARY WINDINGS.
ALL LEAD WIRES MUST BE GLUED TO 4MM MYLAR BASE THAT IS LARGE ENOUGH TO PROTECT THE SOLDER JOINTS. FOR PRIMARY LEADS, BOTH SIDES OF THIS TERMINATION BASE MUST BE PROTECTED WITH AN ADDITIONAL LAYER OF .18MM MYLAR. ALL PRIMARY MAG WIRE LEADS MUST BE SLEEVED WITH .4MM INSULATION TO TERMINATION BASE. OTHER CONSTRUCTION METHODS MAY BE USED OR REQUIRED TO INSURE COMPLIANCE.

NOTES:
1. APPLICATION AUDIO AMPIFIER.
2. ALL FIVE SECONDARIES ARE IDENTICAL AND LOADED AS SHOWN ABOVE.
3. DRAWING SHOWS FULL POWER REQUIREMENTS. VA AT FULL POWER IS EQUAL TO 1688W. DESIGN FOR LESS THAN 70°C RISE AT 750W (RATED POWER), UL RESISTANCE METHOD.
4. CORE TO BE IMPREGNATED AND FLUX DENSITY MUST BE LESS THAN 12,000 GAUSS.
5. MECHANICAL NOISE INAUDIBLE AT ONE METER.
6. 110°C THERMAL BREAKER RATED FOR 5A/250V, TEMP CUTOUT EQUIV TO PEPI B 110°C RESETTABLE WITH < 12°C DERATING AT 5A.
7. EXTERIOR WRAPPING TAPE TRANSLUCENT.
8. SECONDARY WIRE TO MEET AWN 1015 VW-1 CSA TEW 105°C, 600V.
9. PRIMARY WIRE TO MEET AWN 1672, 105°, DOUBLE INSULATION TYPE.

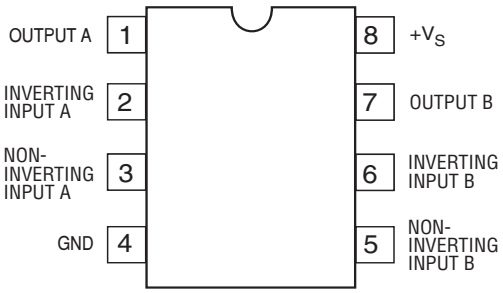


Signature 2.1 (230V) Transformer Wiring Rev B

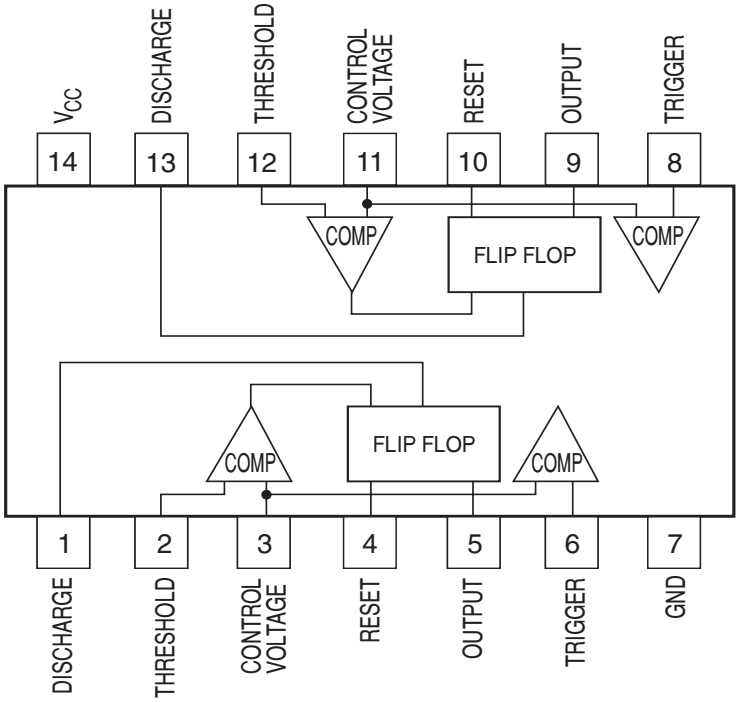


NOTES:
6.5 ABSOLUTE MAXIMUM DIAMETER.
SECONDARIES ARE TERMINATED WITH MOLEX 08-52-0071 TERMINALS AND MOLEX 09-50-8033 HOUSINGS.
EQUIVALENT TERMINATIONS ARE ACCEPTABLE IF APPROVED BY GALLIEN TECHNOLOGY ENG. DEPT.

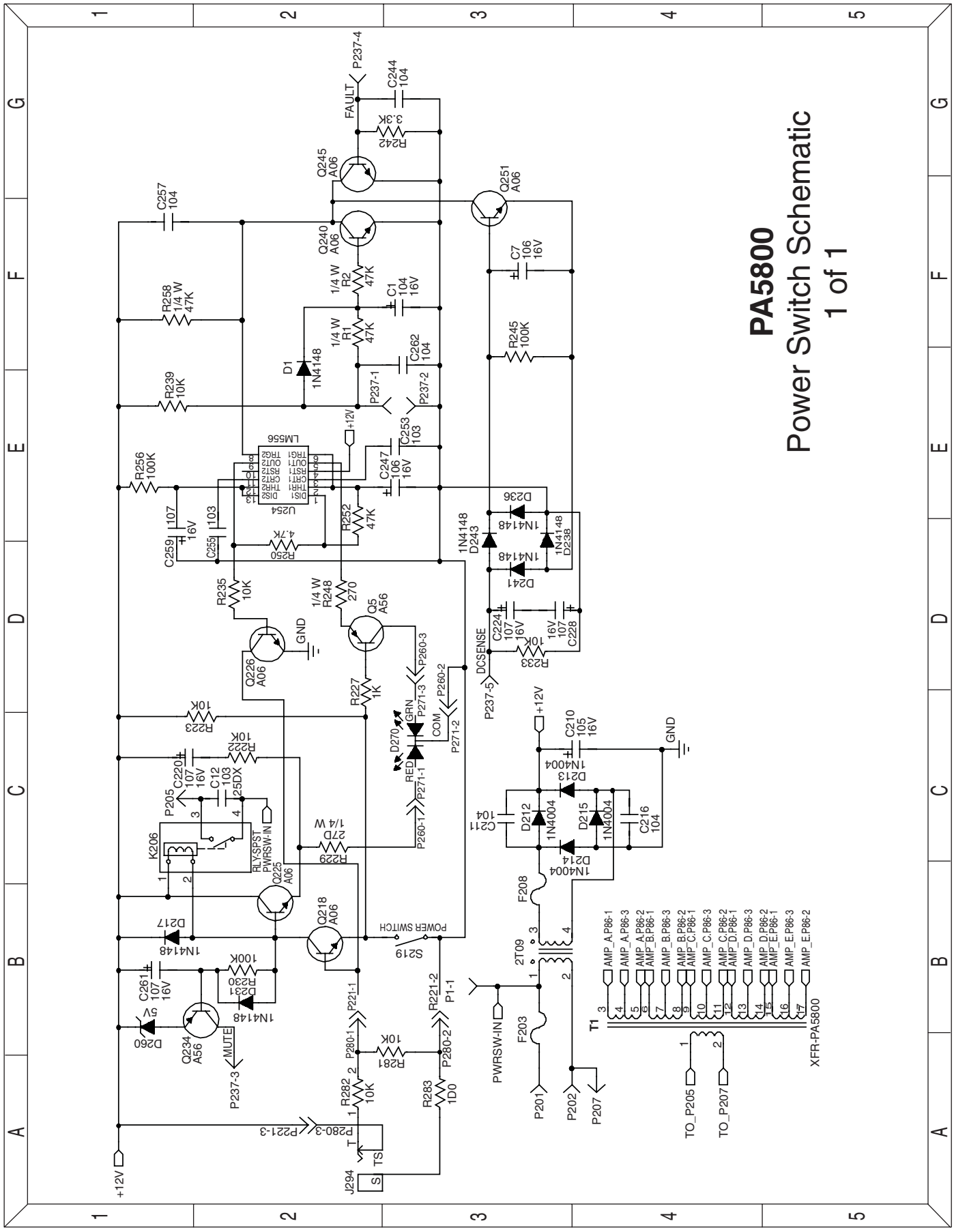
Signature 2.1: U1
LM393N DUAL COMARATOR
A001-0005-0



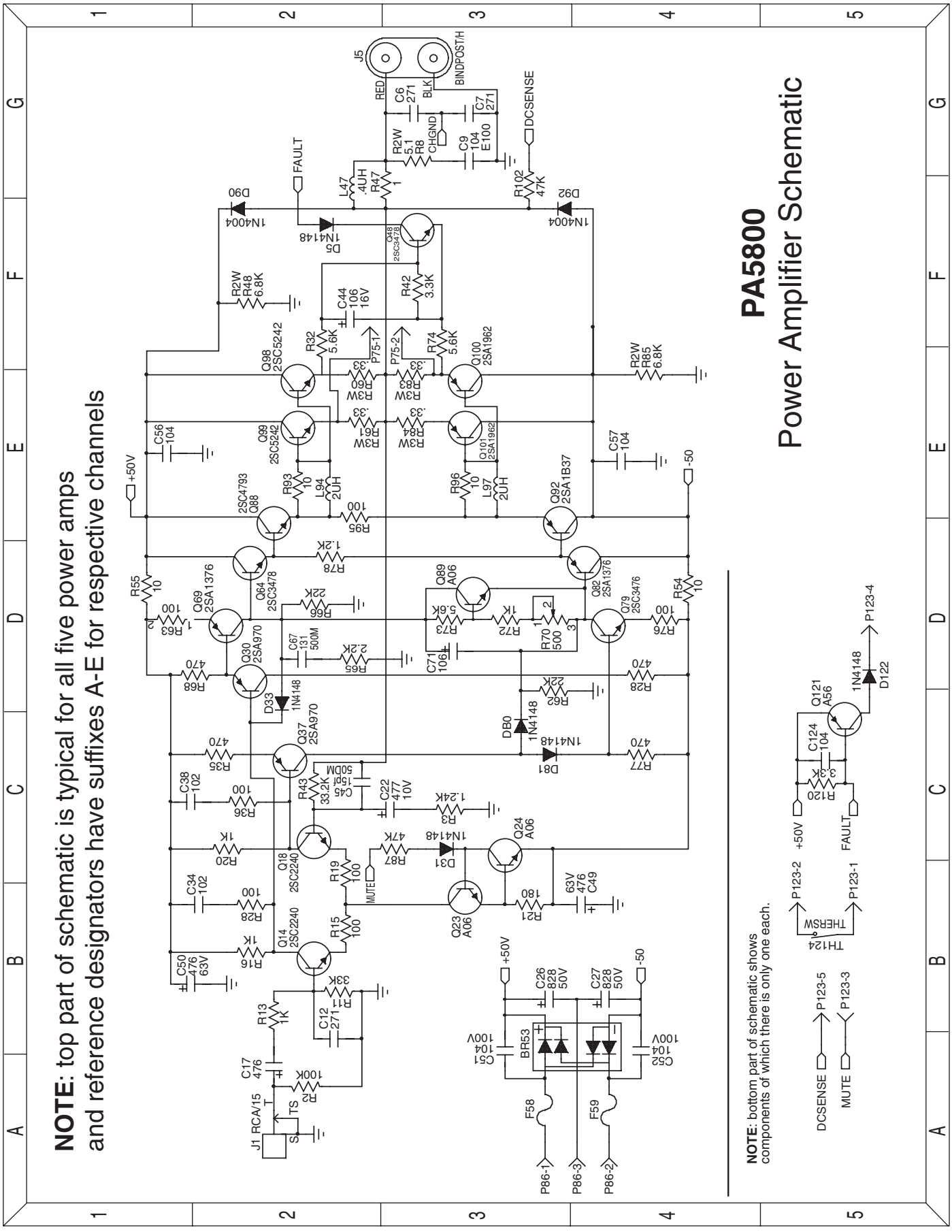
PA5800: U254
Signature 2.1: U2
LM556CN DUAL TIMER
A001-2009-0



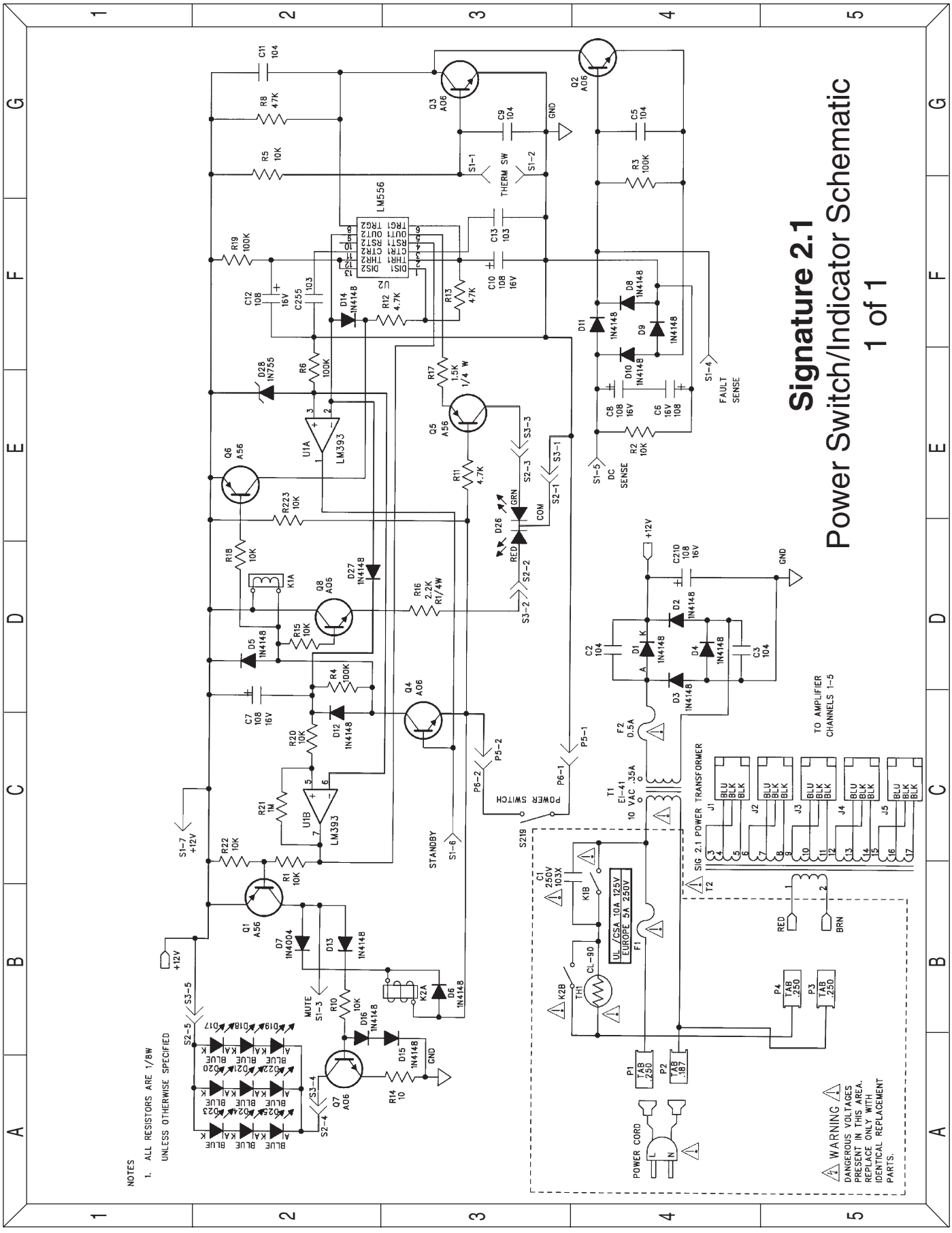
PA5800 POWER SWITCH SCHEMATIC (1 of 1)



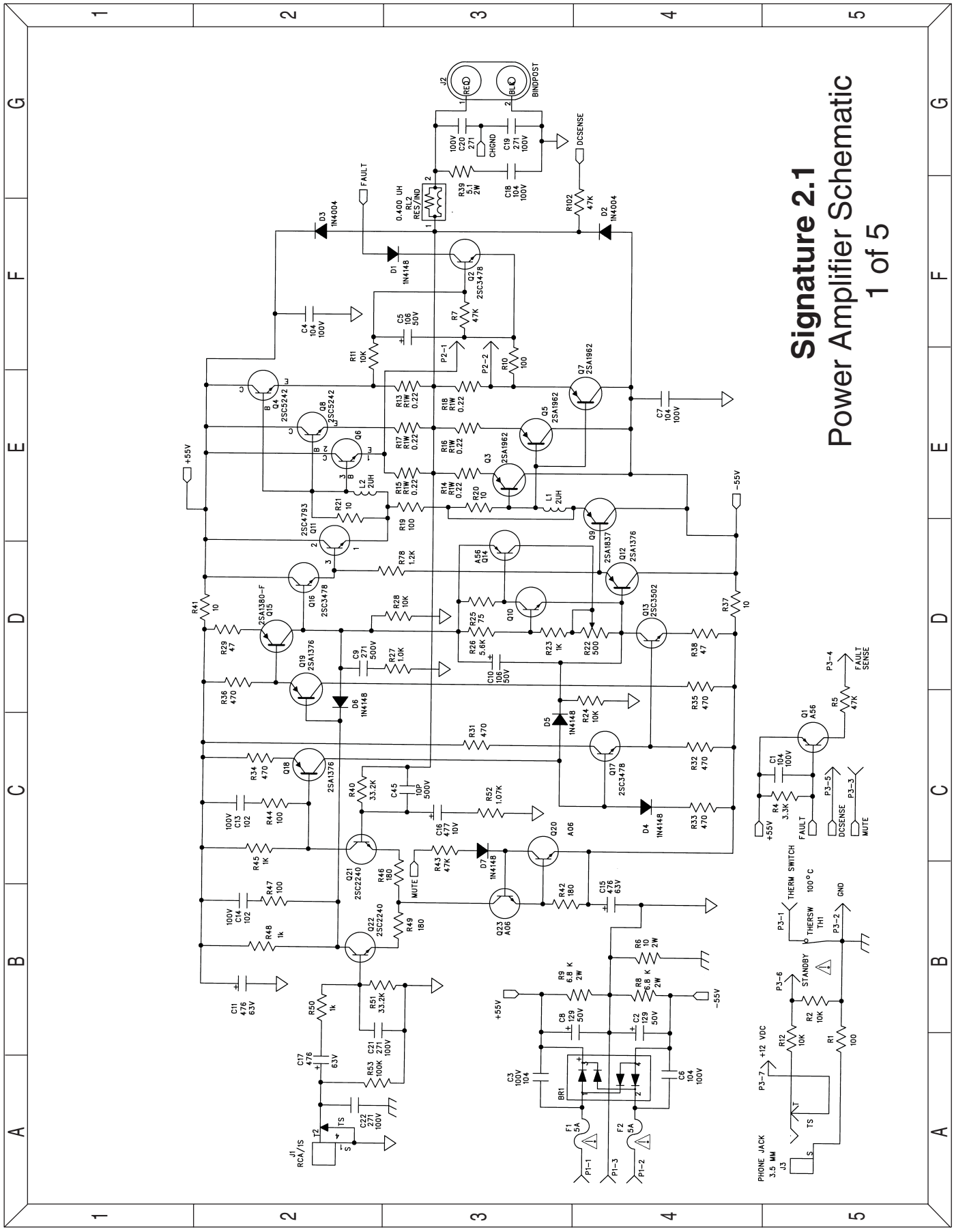
PA5800 POWER AMPLIFIER SCHEMATIC



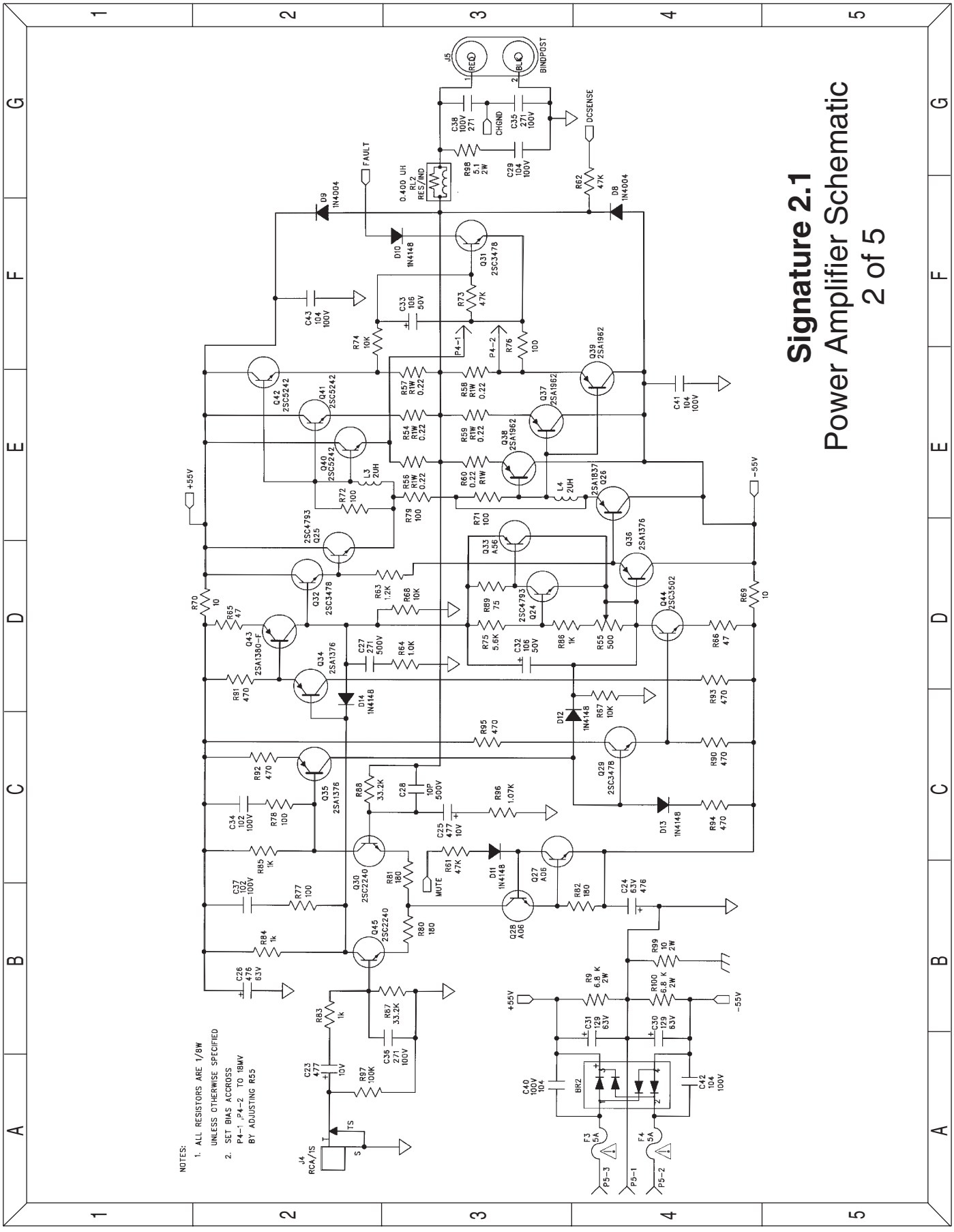
Signature 2.1 POWER SWITCH/INDICATOR SCHEMATIC (1 of 1)



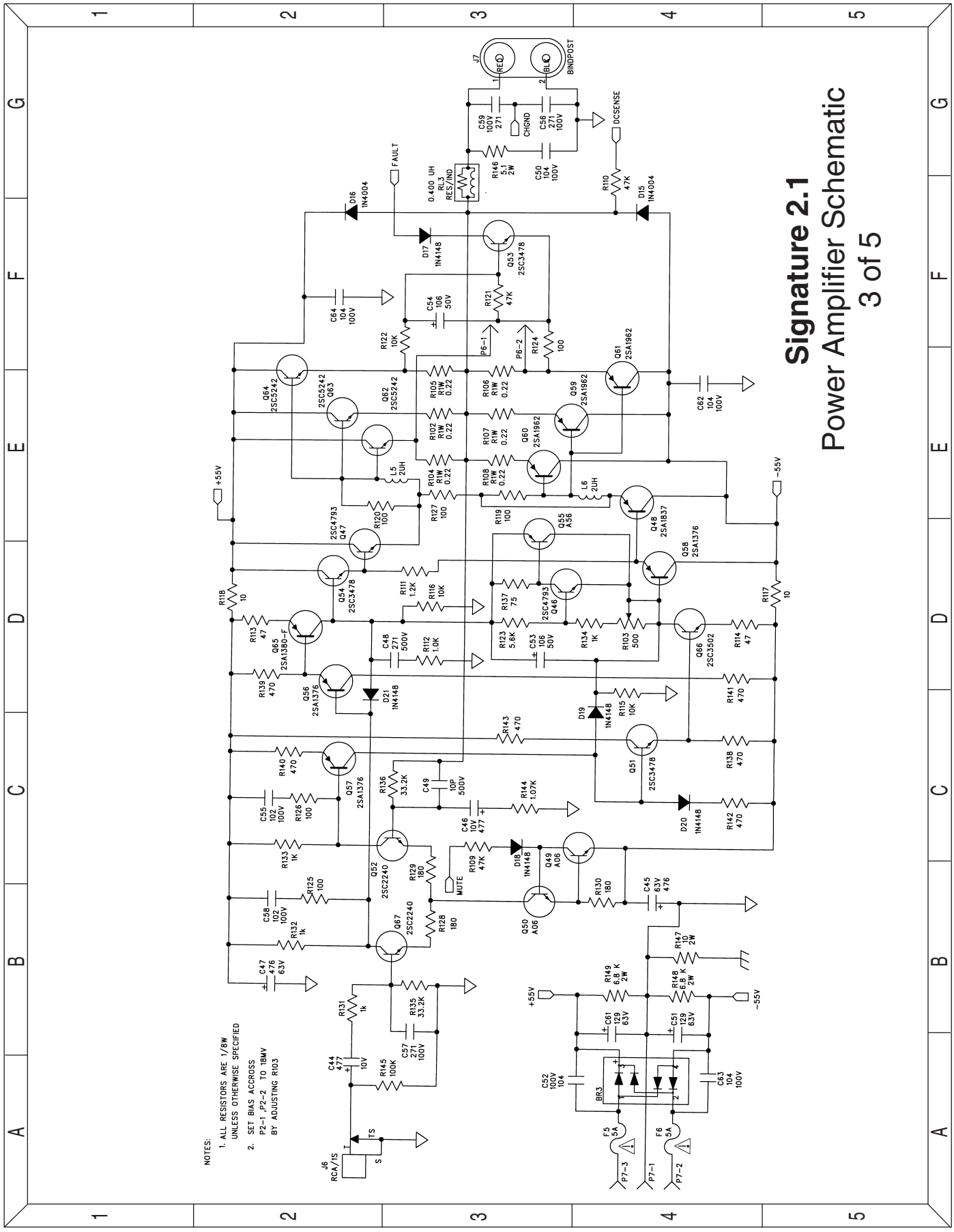
Signature 2.1 POWER AMP SCHEMATIC (1 of 5)



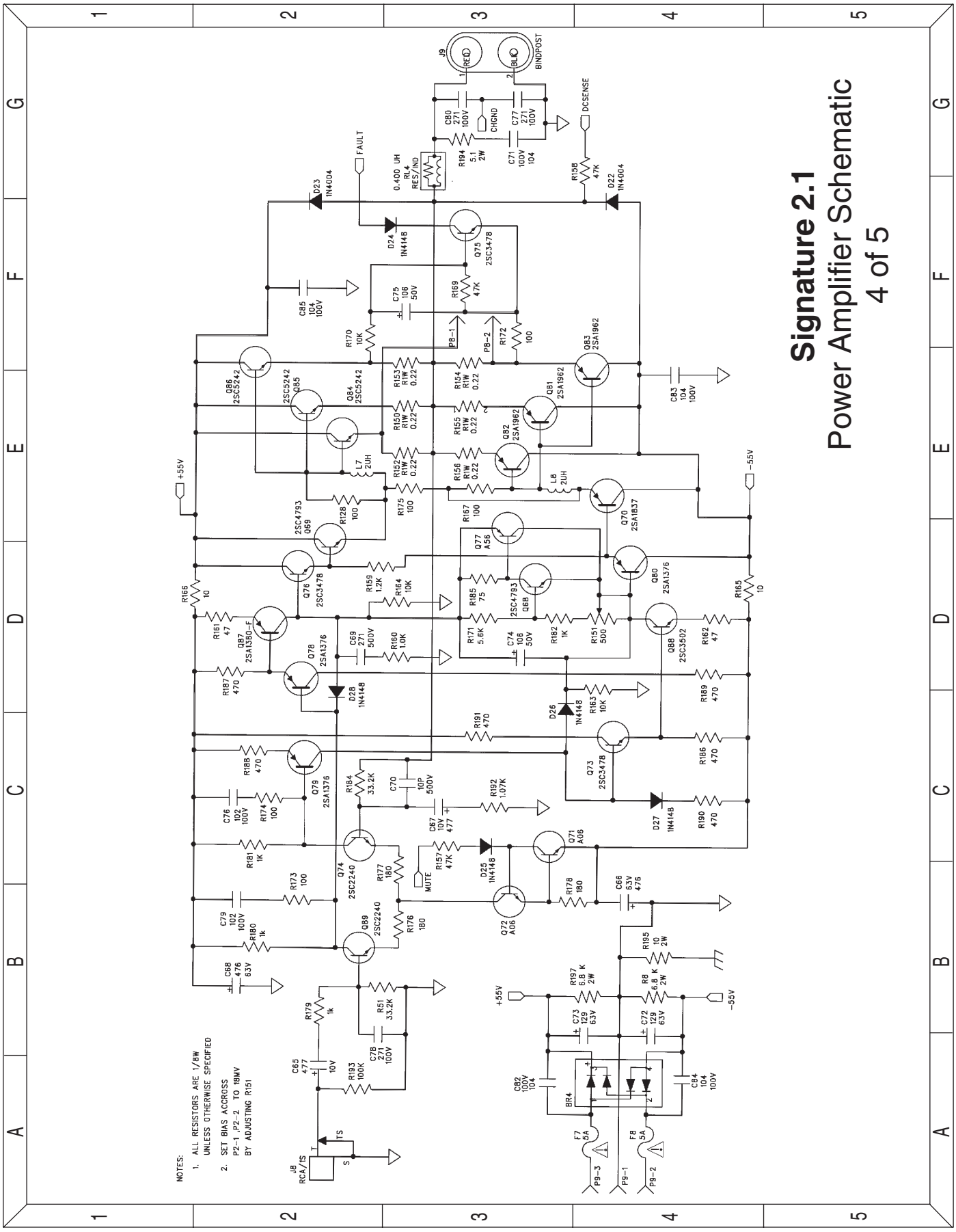
Signature 2.1 POWER AMP SCHEMATIC (2 of 5)



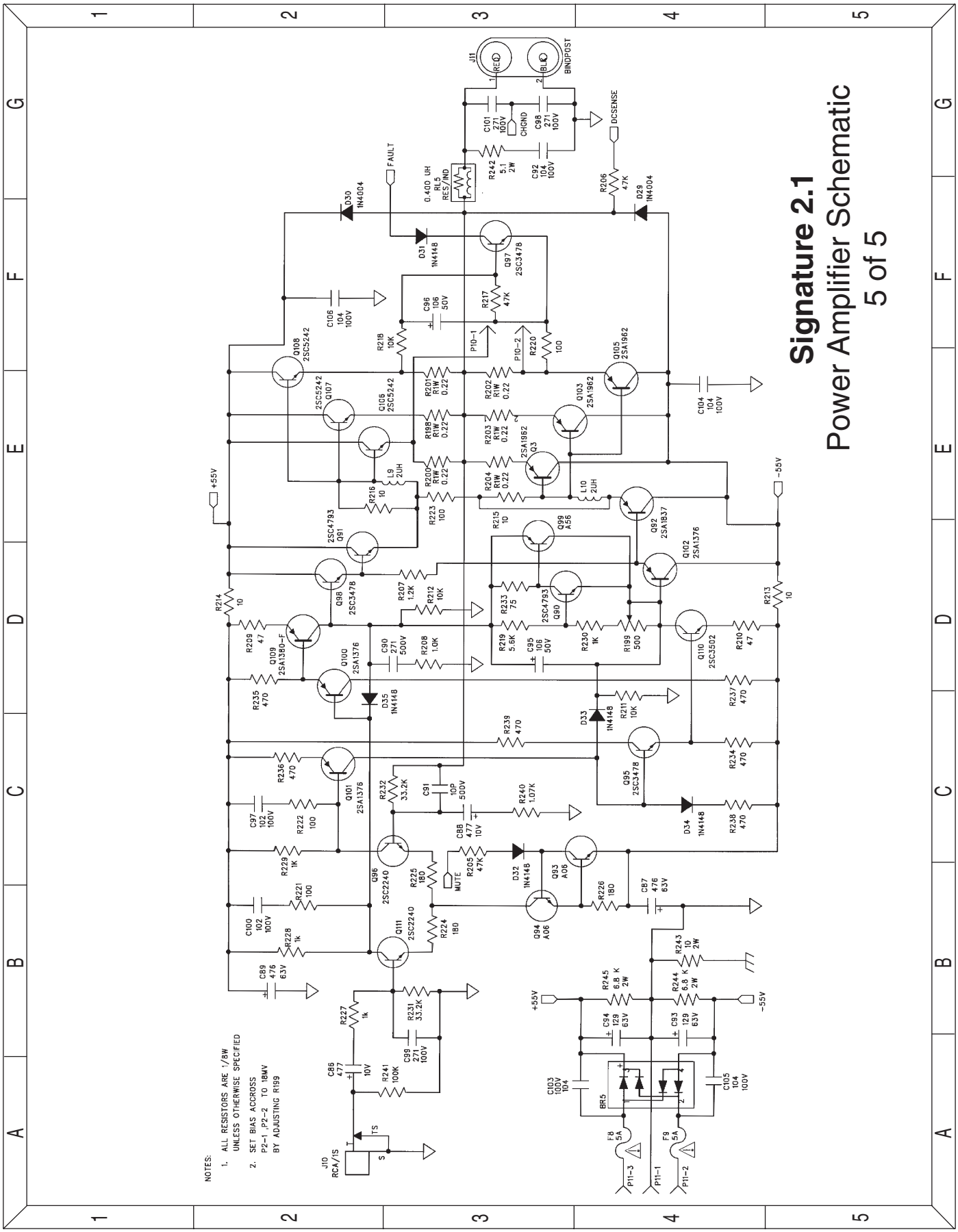
Signature 2.1 POWER AMP SCHEMATIC (3 of 5)

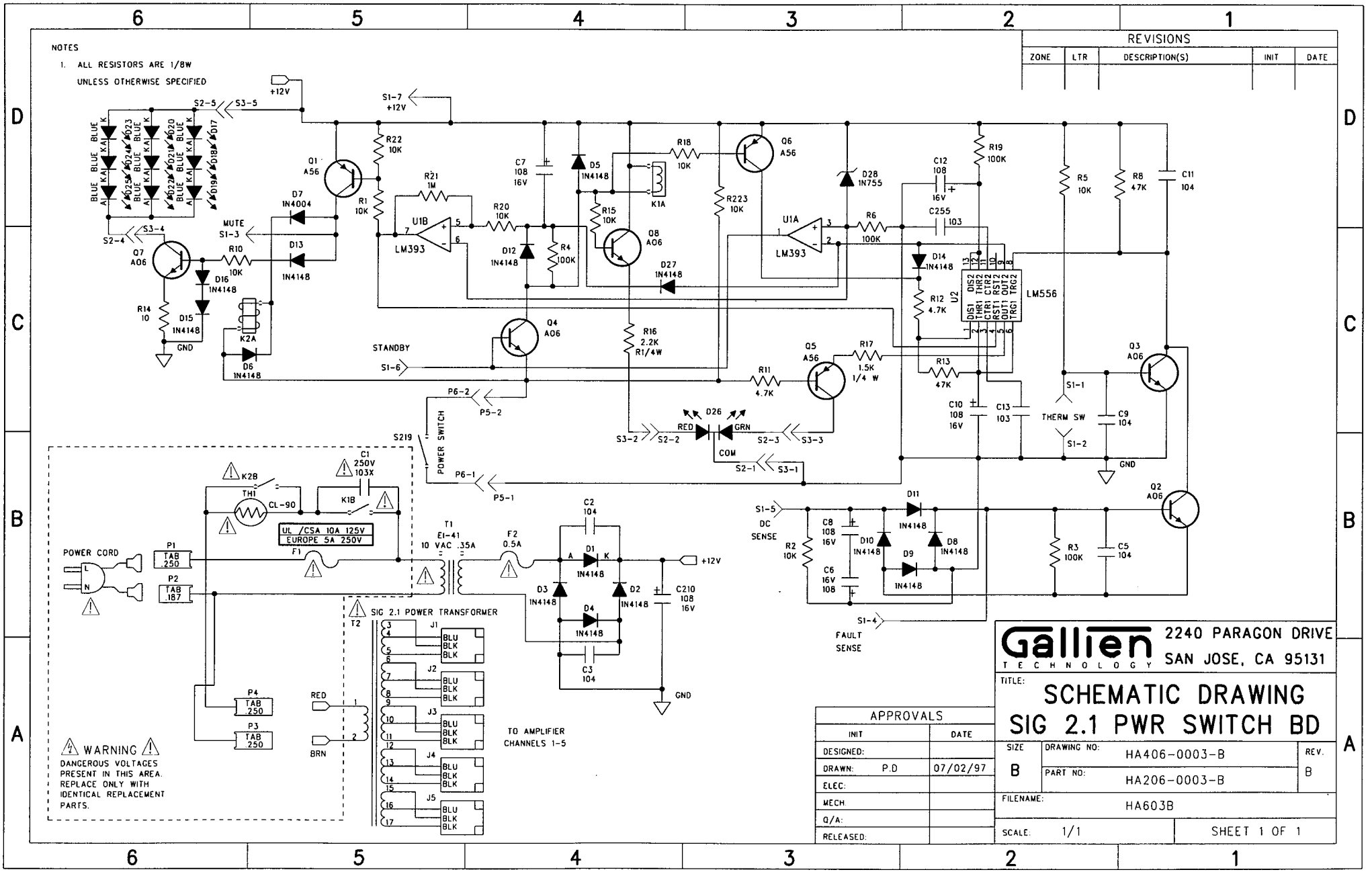


Signature 2.1 POWER AMP SCHEMATIC (4 of 5)



Signature 2.1 POWER AMP SCHEMATIC (5 of 5)




NOTES
1. ALL RESISTORS ARE 1/8W
UNLESS OTHERWISE SPECIFIED
REVISIONS
ZONE | LTR | DESCRIPTION(S) | INIT | DATE
+12V
S1-7 +12V
S2-5
S3-5
MUTE
S1-3
STANDBY
S1-6
S219
POWER SWITCH
P6-2
P5-2
P6-1
P5-1
S3-4
S2-4
S3-2
S2-2
S2-3
S3-3
S2-1
S3-1
S1-5
DC SENSE
S1-4
FAULT SENSE
S1-1
S1-2
THERM SW
GND
COM
RED
GRN
BLUE
Q1 A56
Q2 A06
Q3 A06
Q4 A06
Q5 A56
Q6 A56
Q7 A06
Q8 A06
U1A
U1B
LM393
U2
LM556
K1A
K2A
K2B
D1 1N4148
D2 1N4148
D3 1N4148
D4 1N4148
D5 1N4148
D6 1N4148
D7 1N4004
D8 1N4148
D9 1N4148
D10 1N4148
D11 1N4148
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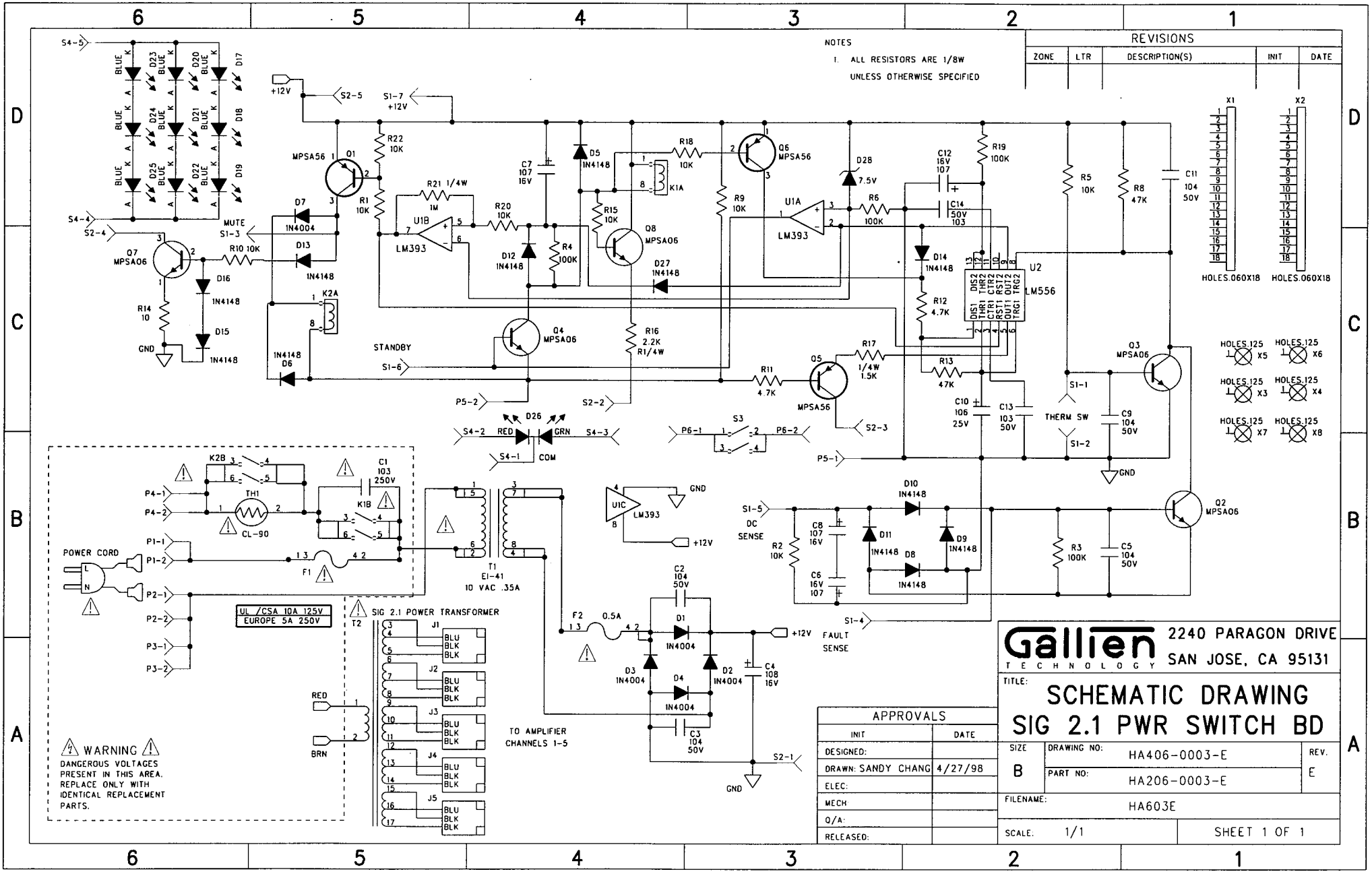
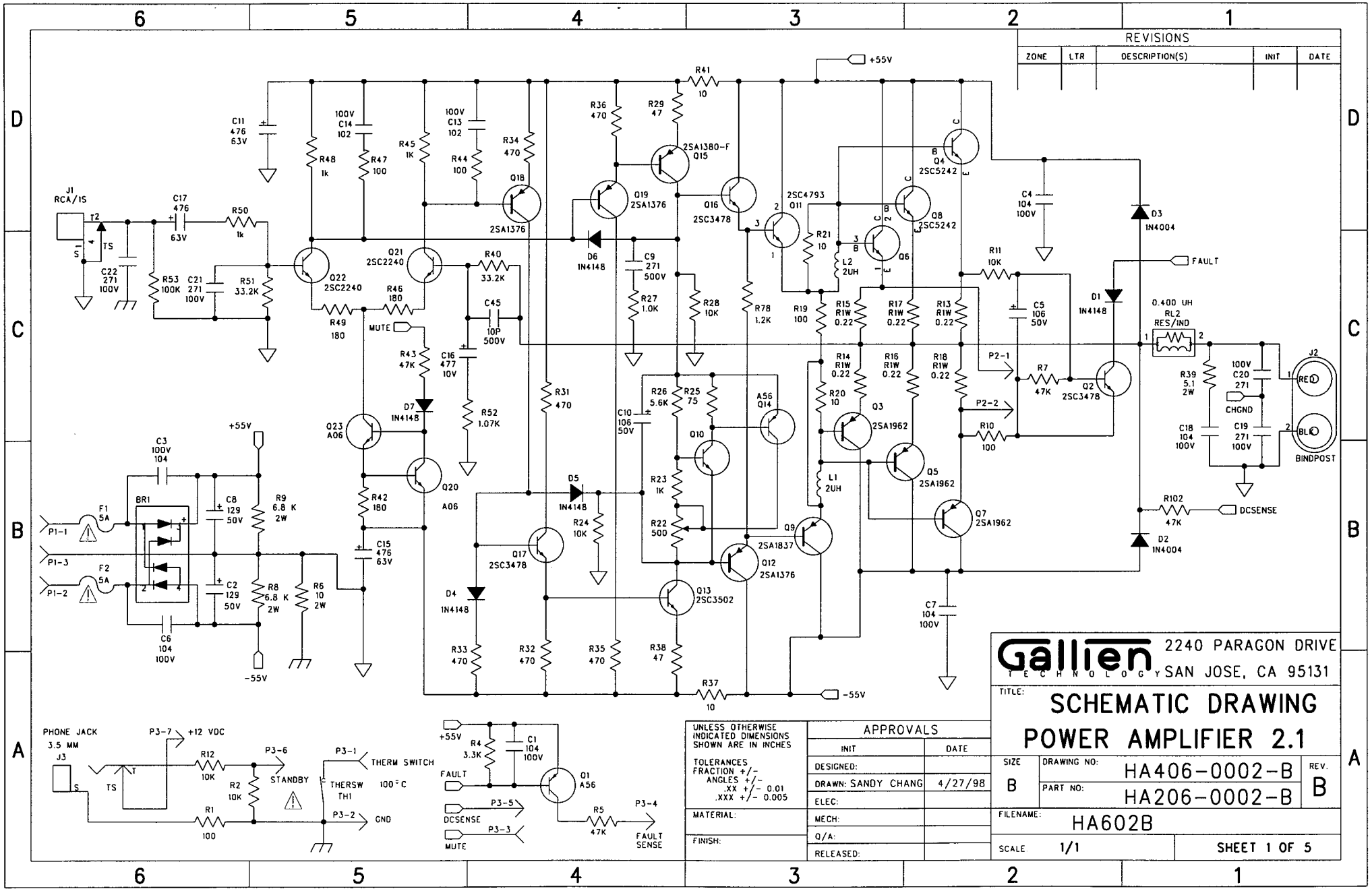
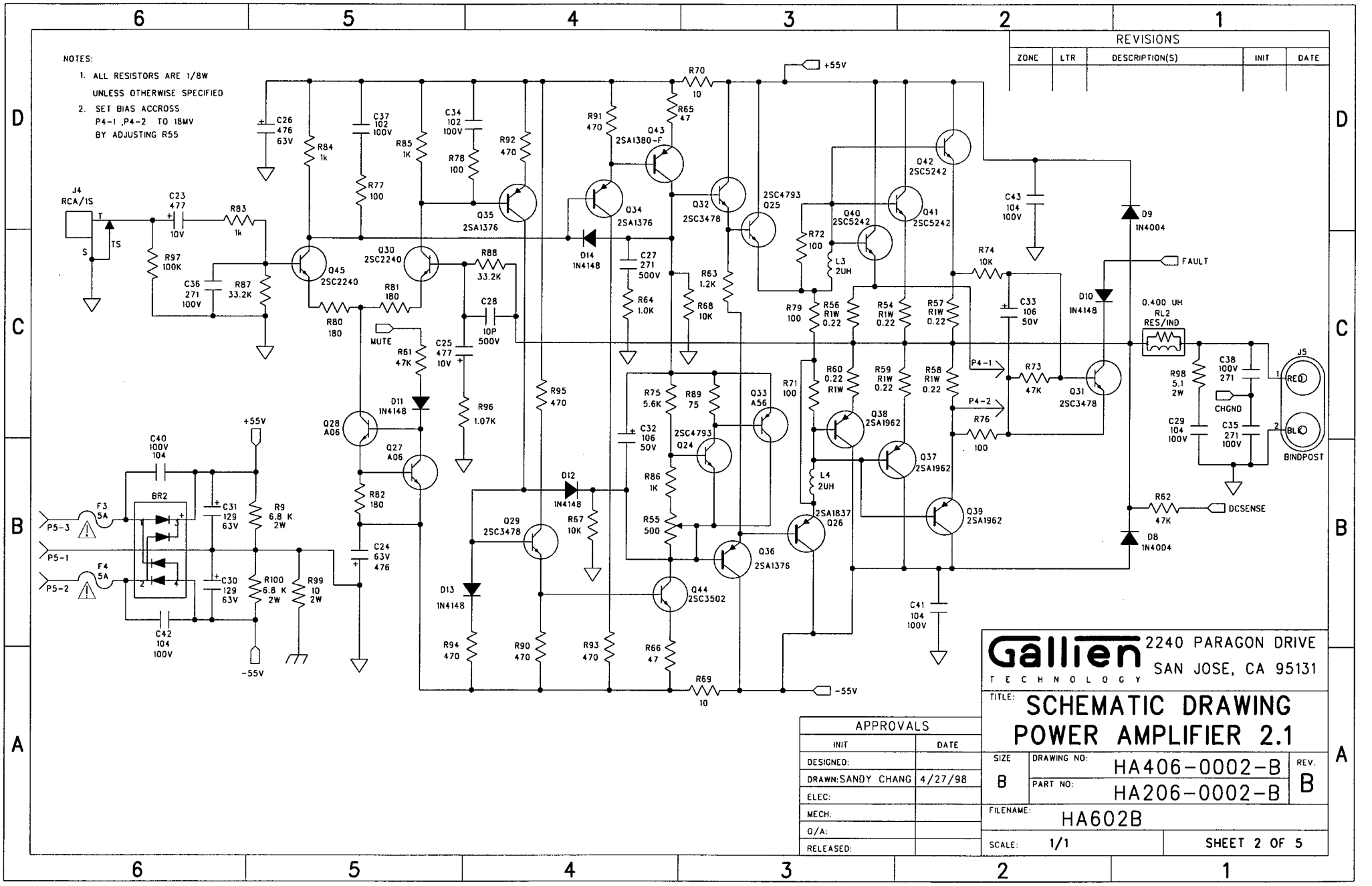
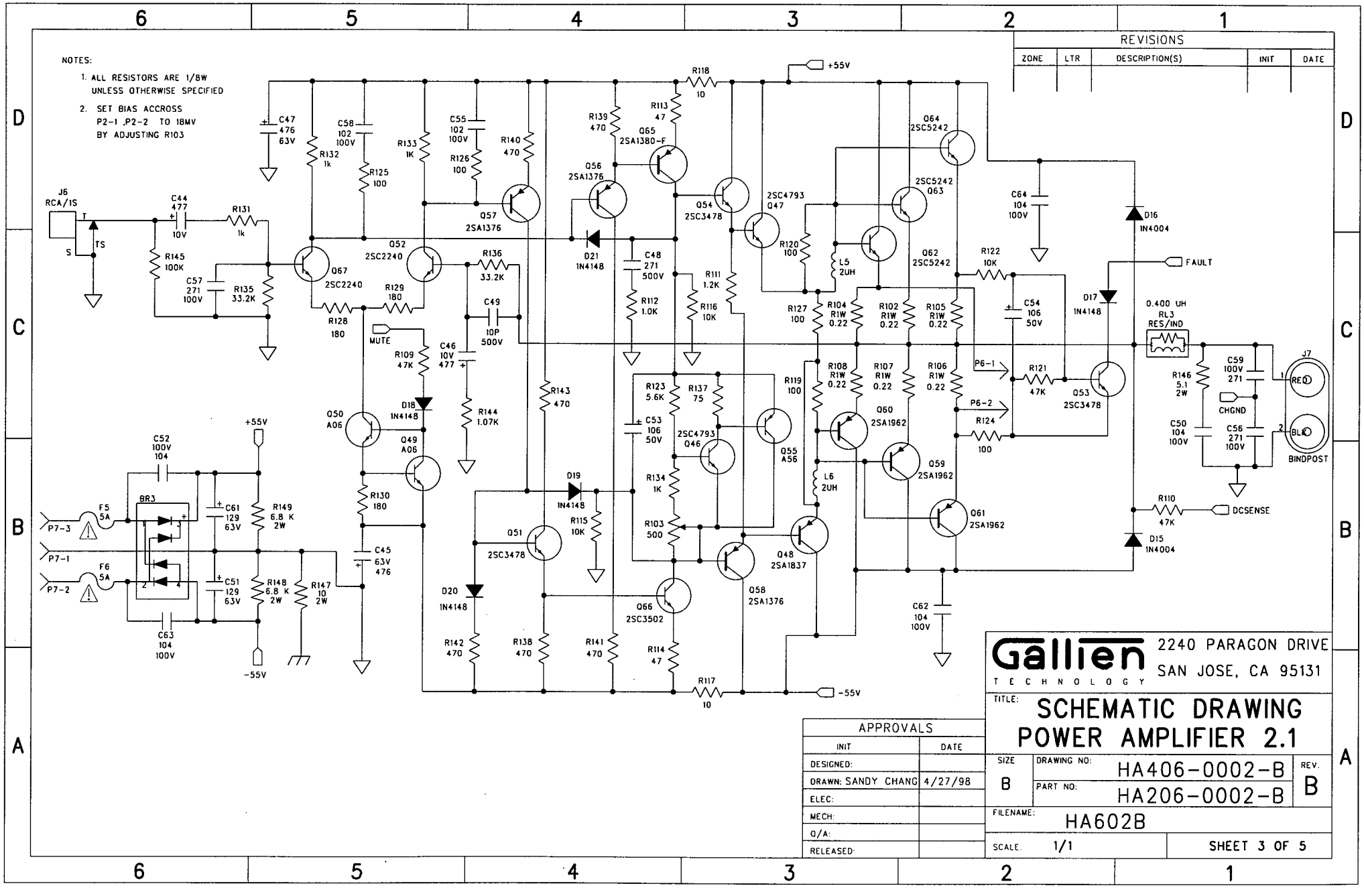
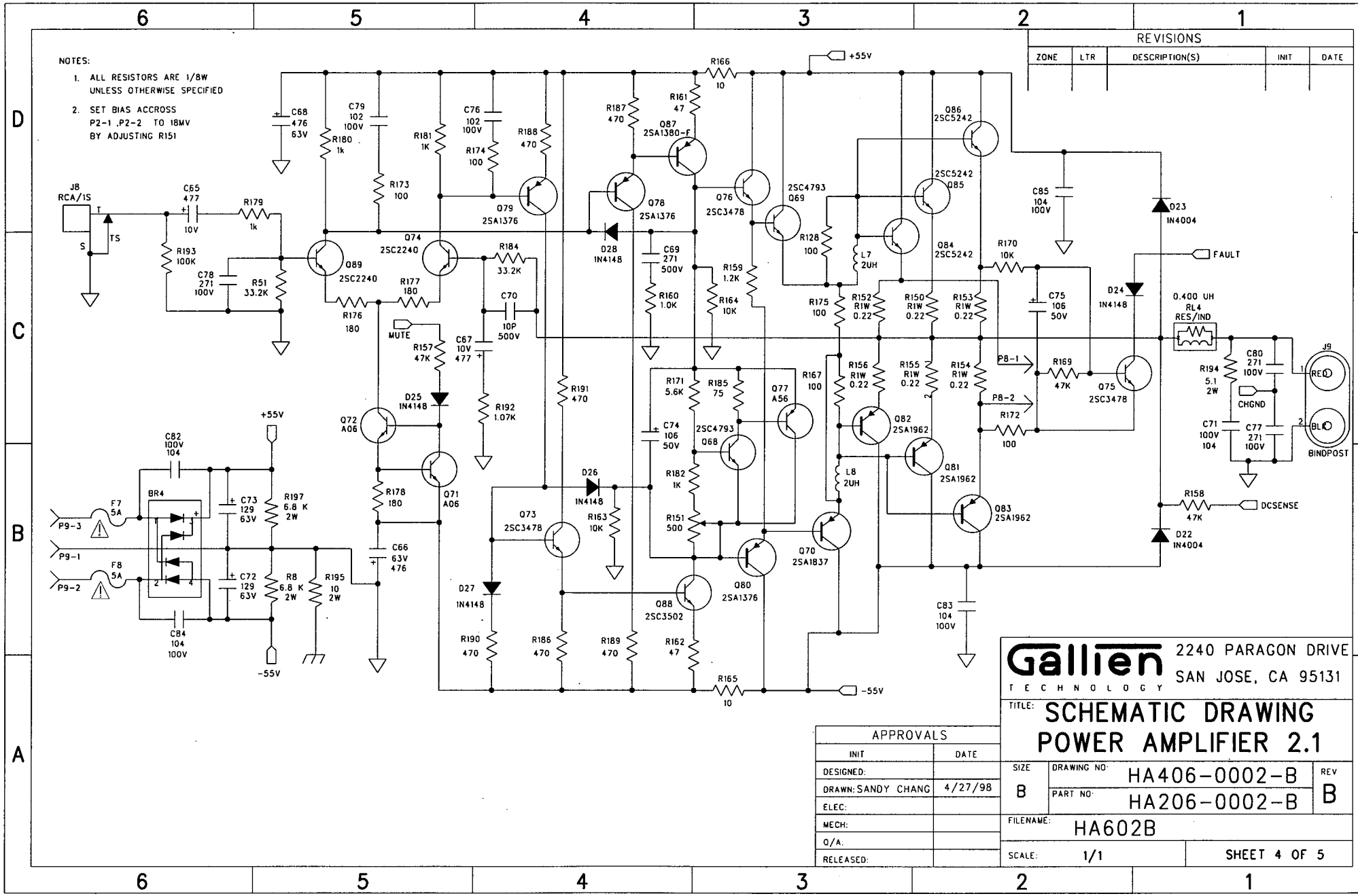
D14 1N4148
D15 1N4148
D16 1N4148
D27 1N4148
D28 1N755
D26
R1 10K
R2 10K
R3 100K
R4 100K
R5 10K
R6 100K
R8 47K
R10 10K
R11 4.7K
R12 4.7K
R13 47K
R14 10
R15 10K
R16 2.2K R1/4W
R17 1.5K 1/4 W
R18 10K
R19 100K
R20 10K
R21 1M
R22 10K
R223 10K
C1 250V 103X
C2 104
C3 104
C5 104
C6 16V 108
C7 108 16V
C8 108 16V
C9 104
C10 108 16V
C11 104
C12 108 16V
C13 103
C210 108 16V
C255 103
TH1 CL-90
F1
F2 0.5A
T1 EI-41 10 VAC .35A
T2
SIG 2.1 POWER TRANSFORMER
J1
J2
J3
J4
J5
BLU BLK BLK
P1 TAB .250
P2 TAB .187
P3 TAB .250
P4 TAB .250
POWER CORD
L
N
UL /CSA 10A 125V
EUROPE 5A 250V
TO AMPLIFIER CHANNELS 1-5
WARNING
DANGEROUS VOLTAGES PRESENT IN THIS AREA. REPLACE ONLY WITH IDENTICAL REPLACEMENT PARTS.
APPROVALS
INIT | DATE
DESIGNED:
DRAWN: P.D 07/02/97
ELEC:
MECH:
Q/A:
RELEASED:
Gallien TECHNOLOGY
2240 PARAGON DRIVE
SAN JOSE, CA 95131
TITLE:
SCHEMATIC DRAWING
SIG 2.1 PWR SWITCH BD
SIZE B
DRAWING NO: HA406-0003-B
REV. B
PART NO: HA206-0003-B
FILENAME: HA603B
SCALE: 1/1
SHEET 1 OF 1

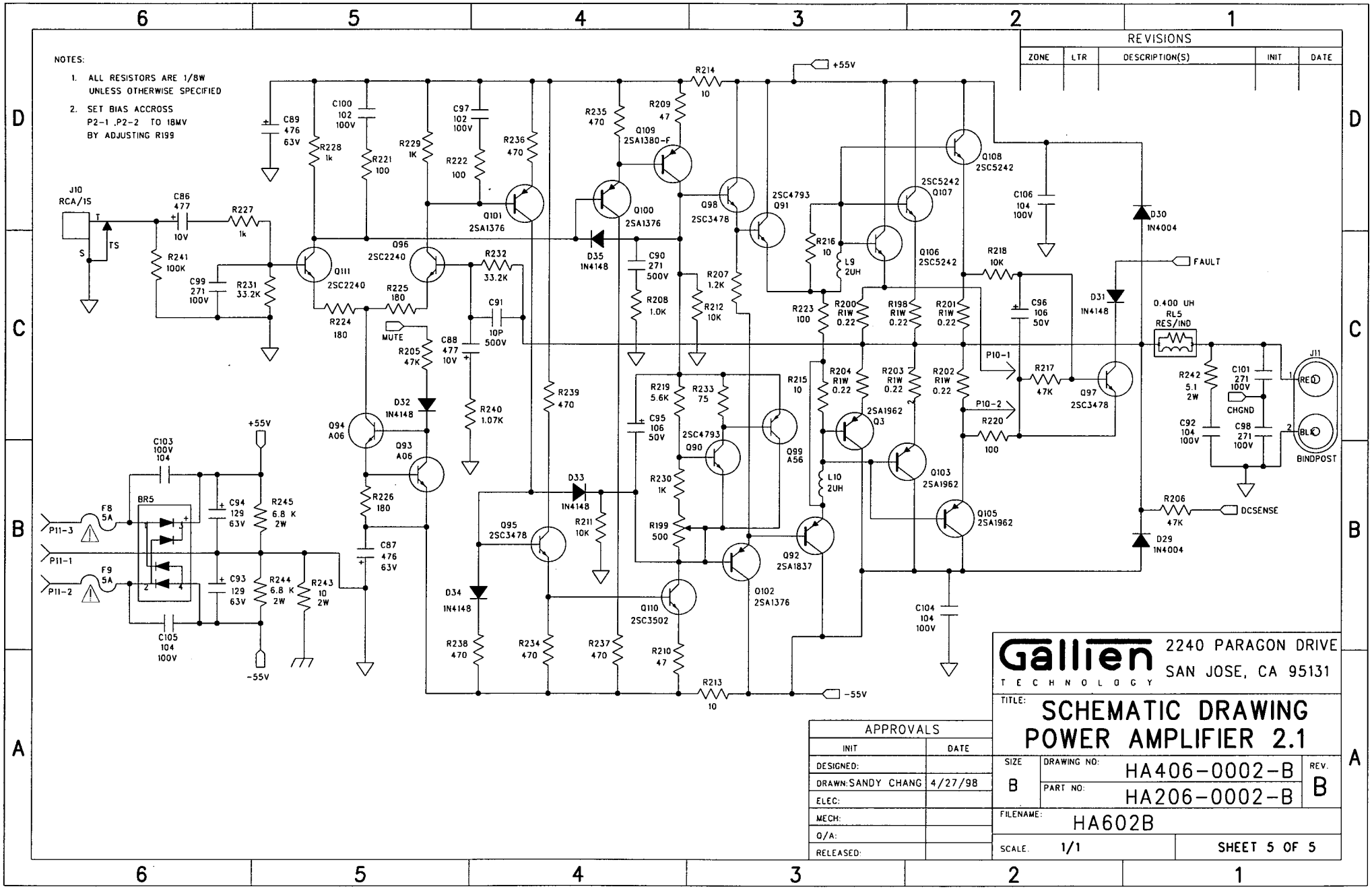

NOTES
1. ALL RESISTORS ARE 1/8W UNLESS OTHERWISE SPECIFIED
REVISIONS
ZONE | LTR | DESCRIPTION(S) | INIT | DATE
WARNING
DANGEROUS VOLTAGES PRESENT IN THIS AREA. REPLACE ONLY WITH IDENTICAL REPLACEMENT PARTS.
UL /CSA 10A 125V
EUROPE 5A 250V
SIG 2.1 POWER TRANSFORMER
TO AMPLIFIER CHANNELS 1-5
APPROVALS
INIT | DATE
DESIGNED:
DRAWN: SANDY CHANG 4/27/98
ELEC:
MECH
Q/A:
RELEASED:
Gallien TECHNOLOGY
2240 PARAGON DRIVE
SAN JOSE, CA 95131
TITLE:
SCHEMATIC DRAWING
SIG 2.1 PWR SWITCH BD
SIZE B
DRAWING NO: HA406-0003-E
REV. E
PART NO: HA206-0003-E
FILENAME: HA603E
SCALE: 1/1
SHEET 1 OF 1


REVISIONS
ZONE | LTR | DESCRIPTION(S) | INIT | DATE
+55V
-55V
MUTE
FAULT
DCSENSE
CHGND
BINDPOST
PHONE JACK
3.5 MM
J3
+12 VDC
STANDBY
THERM SWITCH
THERSW
THI
100°C
GND
DCSENSE
MUTE
FAULT SENSE
2SA1380-F Q15
2SA1376 Q18
Q19 2SA1376
2SC3478 Q16
2SC4793 Q11
2SC5242 Q4
2SC5242 Q8
Q6
IN4004 D3
IN4148 D1
0.400 UH RL2 RES/IND
2SC3478 Q2
2SA1962 Q3
2SA1962 Q5
2SA1962 Q7
IN4004 D2
2SA1837 Q9
2SA1376 Q12
2SC3502 Q13
Q21 2SC2240
Q22 2SC2240
Q23 A06
Q20 A06
Q10
A56 Q14
Q17 2SC3478
Q1 A56
IN4148 D5
IN4148 D6
IN4148 D7
IN4148 D4
BR1
F1 5A
F2 5A
P1-1
P1-3
P1-2
P2-1
P2-2
BINDPOST
RED
BLK
2240 PARAGON DRIVE
SAN JOSE, CA 95131
Gallien TECHNOLOGY
TITLE:
SCHEMATIC DRAWING
POWER AMPLIFIER 2.1
UNLESS OTHERWISE INDICATED DIMENSIONS SHOWN ARE IN INCHES
TOLERANCES
FRACTION +/-
ANGLES +/-
.XX +/- 0.01
.XXX +/- 0.005
MATERIAL:
FINISH:
APPROVALS
INIT | DATE
DESIGNED:
DRAWN: SANDY CHANG 4/27/98
ELEC:
MECH:
Q/A:
RELEASED:
SIZE B
DRAWING NO: HA406-0002-B
PART NO: HA206-0002-B
REV. B
FILENAME: HA602B
SCALE 1/1
SHEET 1 OF 5

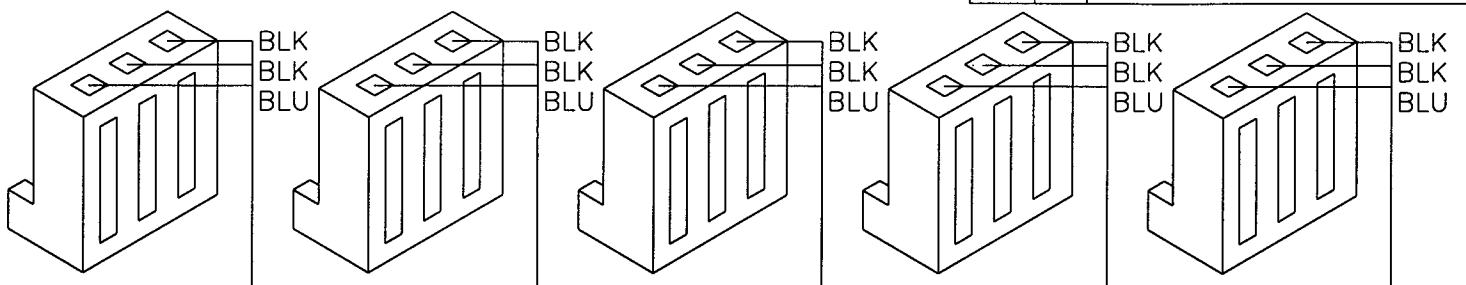

NOTES:
1. ALL RESISTORS ARE 1/8W UNLESS OTHERWISE SPECIFIED
2. SET BIAS ACCROSS P4-1 ,P4-2 TO 18MV BY ADJUSTING R55
REVISIONS
ZONE | LTR | DESCRIPTION(S) | INIT | DATE
+55V
-55V
FAULT
MUTE
DCSENSE
CHGND
P4-1
P4-2
P5-1
P5-2
P5-3
J4 RCA/1S
J5 BINDPOST
BR2
F3 5A
F4 5A
0.400 UH RL2 RES/IND
Q45 2SC2240
Q30 2SC2240
Q28 A06
Q27 A06
Q43 2SA1380-F
Q34 2SA1376
Q35 2SA1376
Q32 2SC3478
Q25 2SC4793
Q42 2SC5242
Q40 2SC5242
Q41 2SC5242
Q33 A56
Q24 2SC4793
Q29 2SC3478
Q36 2SA1376
Q44 2SC3502
Q26 2SA1837
Q38 2SA1962
Q37 2SA1962
Q39 2SA1962
Q31 2SC3478
D8 1N4004
D9 1N4004
D10 1N4148
D11 1N4148
D12 1N4148
D13 1N4148
D14 1N4148
L3 2UH
L4 2UH
R70 10
R65 47
R91 470
R92 470
R84 1k
R77 100
R85 1K
R78 100
R83 1k
R97 100K
R87 33.2K
R88 33.2K
R81 180
R80 180
R72 100
R74 10K
R79 100
R56 R1W 0.22
R54 R1W 0.22
R57 R1W 0.22
R63 1.2K
R68 10K
R64 1.0K
R61 47K
R95 470
R96 1.07K
R75 5.6K
R89 75
R71 100
R60 0.22 R1W
R59 R1W 0.22
R58 R1W 0.22
R73 47K
R76 100
R86 1K
R55 500
R67 10K
R82 180
R94 470
R90 470
R93 470
R66 47
R69 10
R62 47K
R98 5.1 2W
R9 6.8 K 2W
R100 6.8 K 2W
R99 10 2W
C26 476 63V
C37 102 100V
C34 102 100V
C23 477 10V
C36 271 100V
C28 10P 500V
C25 477 10V
C27 271 500V
C32 106 50V
C33 106 50V
C43 104 100V
C38 100V 271
C29 104 100V
C35 271 100V
C40 100V 104
C31 129 63V
C30 129 63V
C42 104 100V
C24 63V 476
C41 104 100V
Gallien TECHNOLOGY
2240 PARAGON DRIVE
SAN JOSE, CA 95131
TITLE: SCHEMATIC DRAWING POWER AMPLIFIER 2.1
SIZE B
DRAWING NO: HA406-0002-B
REV. B
PART NO: HA206-0002-B
FILENAME: HA602B
SCALE: 1/1
SHEET 2 OF 5
APPROVALS
INIT | DATE
DESIGNED:
DRAWN: SANDY CHANG | 4/27/98
ELEC:
MECH:
Q/A:
RELEASED:


NOTES:
1. ALL RESISTORS ARE 1/8W UNLESS OTHERWISE SPECIFIED
2. SET BIAS ACCROSS P2-1 ,P2-2 TO 18MV BY ADJUSTING R103
+55V
-55V
FAULT
MUTE
DCSENSE
CHGND
BINDPOST
P7-3
P7-1
P7-2
P6-1
P6-2
J6 RCA/1S
J7
BR3
F5 5A
F6 5A
Q67 2SC2240
Q52 2SC2240
Q57 2SA1376
Q56 2SA1376
Q65 2SA1380-F
Q54 2SC3478
Q64 2SC5242
Q63 2SC5242
Q62 2SC5242
Q47 2SC4793
Q46 2SC4793
Q50 A06
Q49 A06
Q51 2SC3478
Q55 A56
Q60 2SA1962
Q59 2SA1962
Q61 2SA1962
Q53 2SC3478
Q48 2SA1837
Q58 2SA1376
Q66 2SC3502
D16 1N4004
D17 1N4148
D18 1N4148
D19 1N4148
D20 1N4148
D21 1N4148
D15 1N4004
L5 2UH
L6 2UH
RL3 RES/IND 0.400 UH
R118 10
R113 47
R139 470
R140 470
R132 1k
R125 100
R133 1K
R126 100
R131 1k
R145 100K
R135 33.2K
R136 33.2K
R129 180
R128 180
R109 47K
R144 1.07K
R143 470
R130 180
R123 5.6K
R137 75
R134 1K
R103 500
R115 10K
R119 100
R120 100
R127 100
R111 1.2K
R116 10K
R112 1.0K
R104 R1W 0.22
R102 R1W 0.22
R105 R1W 0.22
R108 R1W 0.22
R107 R1W 0.22
R106 R1W 0.22
R122 10K
R121 47K
R124 100
R110 47K
R146 5.1 2W
R149 6.8 K 2W
R148 6.8 K 2W
R147 10 2W
R142 470
R138 470
R141 470
R114 47
R117 10
C47 476 63V
C58 102 100V
C55 102 100V
C44 477 10V
C57 271 100V
C49 10P 500V
C46 10V 477
C48 271 500V
C53 106 50V
C54 106 50V
C64 104 100V
C62 104 100V
C52 100V 104
C61 129 63V
C51 129 63V
C63 104 100V
C45 63V 476
C59 100V 271
C50 104 100V
C56 271 100V
REVISIONS
ZONE
LTR
DESCRIPTION(S)
INIT
DATE
APPROVALS
INIT
DATE
DESIGNED:
DRAWN: SANDY CHANG 4/27/98
ELEC:
MECH:
Q/A:
RELEASED:
Gallien TECHNOLOGY
2240 PARAGON DRIVE
SAN JOSE, CA 95131
TITLE:
SCHEMATIC DRAWING
POWER AMPLIFIER 2.1
SIZE B
DRAWING NO: HA406-0002-B
REV. B
PART NO: HA206-0002-B
FILENAME: HA602B
SCALE 1/1
SHEET 3 OF 5


NOTES:
1. ALL RESISTORS ARE 1/8W UNLESS OTHERWISE SPECIFIED
2. SET BIAS ACCROSS P2-1 ,P2-2 TO 18MV BY ADJUSTING R151
REVISIONS
ZONE | LTR | DESCRIPTION(S) | INIT | DATE
+55V
-55V
FAULT
MUTE
DCSENSE
CHGND
BINDPOST
P8-1
P8-2
P9-1
P9-2
P9-3
J8 RCA/1S
J9
BR4
F7 5A
F8 5A
Q68 2SC4793
Q69 2SC4793
Q70 2SA1837
Q71 A06
Q72 A06
Q73 2SC3478
Q74 2SC2240
Q75 2SC3478
Q76 2SC3478
Q77 A56
Q78 2SA1376
Q79 2SA1376
Q80 2SA1376
Q81 2SA1962
Q82 2SA1962
Q83 2SA1962
Q84 2SC5242
Q85 2SC5242
Q86 2SC5242
Q87 2SA1380-F
Q88 2SC3502
Q89 2SC2240
D22 1N4004
D23 1N4004
D24 1N4148
D25 1N4148
D26 1N4148
D27 1N4148
D28 1N4148
0.400 UH RL4 RES/IND
L7 2UH
L8 2UH
APPROVALS
INIT | DATE
DESIGNED:
DRAWN: SANDY CHANG | 4/27/98
ELEC:
MECH:
Q/A:
RELEASED:
Gallien TECHNOLOGY
2240 PARAGON DRIVE
SAN JOSE, CA 95131
TITLE: SCHEMATIC DRAWING
POWER AMPLIFIER 2.1
SIZE B
DRAWING NO: HA406-0002-B
REV B
PART NO: HA206-0002-B
FILENAME: HA602B
SCALE: 1/1
SHEET 4 OF 5


NOTES:
1. ALL RESISTORS ARE 1/8W UNLESS OTHERWISE SPECIFIED
2. SET BIAS ACCROSS P2-1 ,P2-2 TO 18MV BY ADJUSTING R199
REVISIONS
ZONE | LTR | DESCRIPTION(S) | INIT | DATE
+55V
-55V
FAULT
DCSENSE
MUTE
CHGND
BINDPOST
0.400 UH RL5 RES/IND
Gallien TECHNOLOGY
2240 PARAGON DRIVE
SAN JOSE, CA 95131
TITLE: SCHEMATIC DRAWING POWER AMPLIFIER 2.1
APPROVALS
INIT | DATE
DESIGNED:
DRAWN: SANDY CHANG | 4/27/98
ELEC:
MECH:
Q/A:
RELEASED:
SIZE B
DRAWING NO: HA406-0002-B
REV. B
PART NO: HA206-0002-B
FILENAME: HA602B
SCALE: 1/1
SHEET 5 OF 5

REVISIONS				
ZONE	LTR	DESCRIPTION OF CHANGE(S)	INIT	DATE



SECONDARY (18AWG WIRE)

8.5"

6.5"

LEAVE 5" CLEAR

9.0"

7.0"

10.5"

LEAVE 1" CLEAR

RED

12"

BRN

12"

.250 FASTON CONNECTORS

1"

6.5"

NOTES:
6.5 ABSOLUTE MAXIMUM DIAMETER.
SECONDARIES ARE TERMINATED WITH MOLEX 08-52-0071 TERMINALS AND MOLEX 09-50-8033 HOUSINGS.
EQUIVALENT TERMINATIONS ARE ACCEPTABLE IF APPROVED BY GALLIEN TECHNOLOGY ENG. DEPT.

PRIMARY (16AWG WIRE) DOUBLE INSULATION FOR CLASS II APPLICATION

4.5

SECONDARY

WIRES TO COME OUT ON TOP

QTY PER ASSY	PART NUMBER	DESCRIPTION	DESIGNATION(S)	ITEM NO.
PARTS LIST				

PROPRIETARY

THIS DRAWING CONTAINS INFORMATION WHICH IS PROPRIETARY TO GALLIEN TECHNOLOGY CORPORATION. DO NOT REPRODUCE IN ANY FORM OR DISTRIBUTE IN ANY FASHION WITHOUT THE EXPRESS WRITTEN PERMISSION OF GALLIEN TECHNOLOGY CORPORATION.

UNLESS OTHERWISE INDICATED DIMENSIONS ARE IN INCHES

TOLERANCES
FRACTION ±
ANGLES ±
.XX ± 0.01
.XXX ± 0.005

MATERIAL: (SEE NOTE 1)

FINISH: (SEE NOTE 1)

APPROVALS	INIT	DATE
DESIGNED:		
DRAWN:		09/18/97
ELEC:		
MECH:		
Q/A:		
RELEASED:		

Gallien TECHNOLOGY
2240 PARAGON DRIVE
SAN JOSE, CA 95131

TITLE: TRANSFORMER SIG2.1 (230V)

SIZE	DRAWING NUMBER	REVISION
A	408-0011-B	B
	PART NUMBER: 080-0011-A	

FILENAME: 811B.DWG (AUTOCAD)

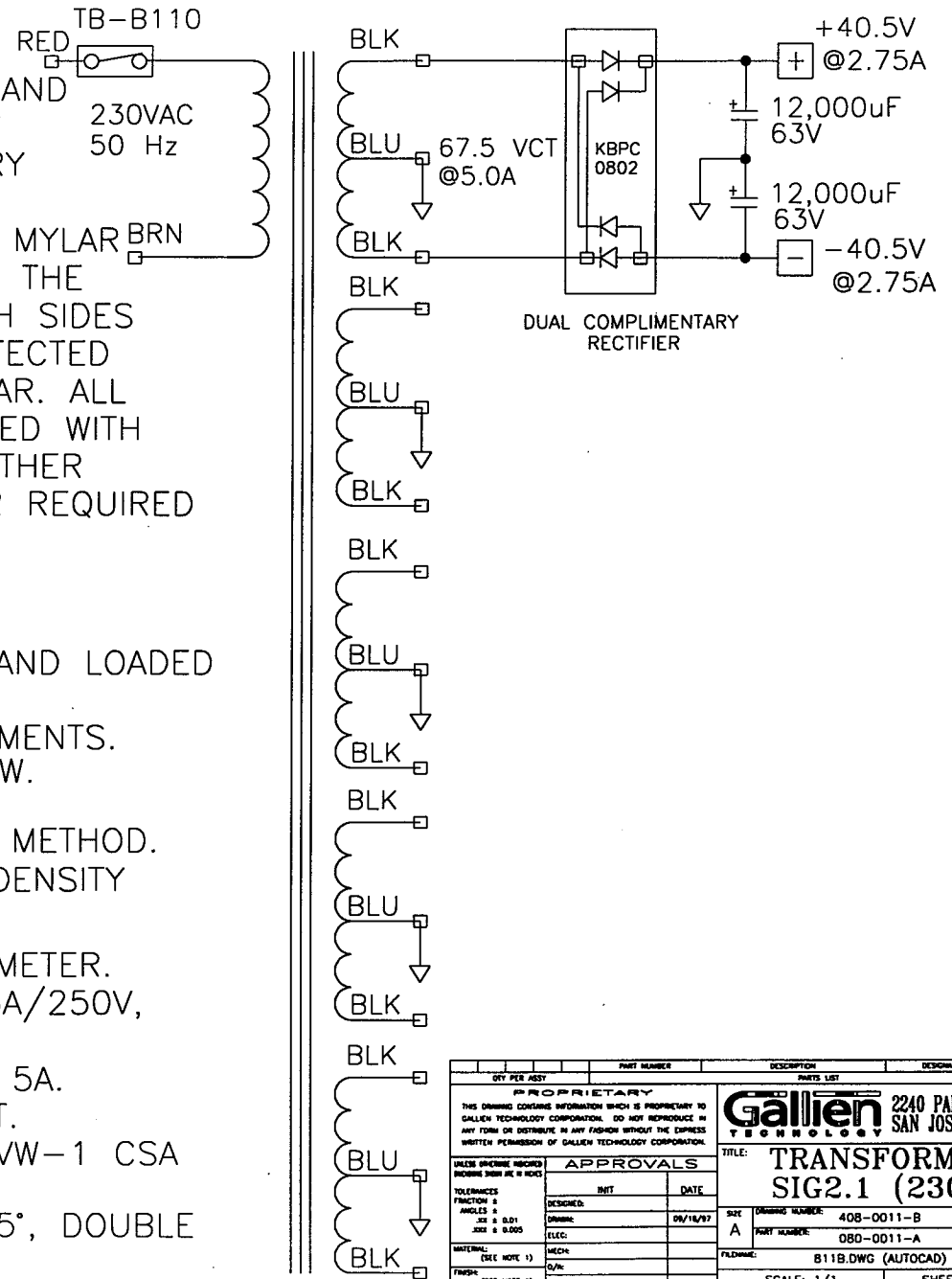
SCALE: 1/1 SHEET 2 OF 2

VERY IMPORTANT

THIS TRANSFORMER MUST BE BUILT TO EN60065 SPECIFICATIONS. 5MM CREEPAGE AND THREE LAYERS OF .7MM MYLAR INSULATION MUST BE MAINTAINED BETWEEN ALL PRIMARY AND SECONDARY WINDINGS.
ALL LEAD WIRES MUST BE GLUED TO 4MM MYLAR BASE THAT IS LARGE ENOUGH TO PROTECT THE SOLDER JOINTS. FOR PRIMARY LEADS, BOTH SIDES OF THIS TERMINATION BASE MUST BE PROTECTED WITH AN ADDITIONAL LAYER OF .18MM MYLAR. ALL PRIMARY MAG WIRE LEADS MUST BE SLEEVED WITH .4MM INSULATION TO TERMINATION BASE. OTHER CONSTRUCTION METHODS MAY BE USED OR REQUIRED TO INSURE COMPLIANCE.

NOTES:

1. APPLICATION AUDIO AMPIFIER.
2. ALL FIVE SECONDARIES ARE IDENTICAL AND LOADED AS SHOWN ABOVE.
3. DRAWING SHOWS FULL POWER REQUIREMENTS. VA AT FULL POWER IS EQUAL TO 1688W. DESIGN FOR LESS THAN 70°C RISE AT 750W (RATED POWER), UL RESISTANCE METHOD.
4. CORE TO BE IMPREGNATED AND FLUX DENSITY MUST BE LESS THAN 12,000 GAUSS.
5. MECHANICAL NOISE INAUDIBLE AT ONE METER.
6. 110°C THERMAL BREAKER RATED FOR 5A/250V, TEMP CUTOUT EQUIV TO PEPI B 110°C RESETTABLE WITH < 12°C DERATING AT 5A.
7. EXTERIOR WRAPPING TAPE TRANSLUCENT.
8. SECONDARY WIRE TO MEET AWN 1015 VW-1 CSA TEW 105°C, 600V.
9. PRIMARY WIRE TO MEET AWN 1672, 105°, DOUBLE INSULATION TYPE.



REVISIONS

ZONE	LTR	DESCRIPTION OF CHANGE(S)	INIT	DATE

PARTS LIST

QTY PER ASSY	PART NUMBER	DESCRIPTION	DESIGNATION(S)	ITEM NO.

PROPRIETARY
THIS DRAWING CONTAINS INFORMATION WHICH IS PROPRIETARY TO GALLIEN TECHNOLOGY CORPORATION. DO NOT REPRODUCE IN ANY FORM OR DISTRIBUTE IN ANY FASHION WITHOUT THE EXPRESS WRITTEN PERMISSION OF GALLIEN TECHNOLOGY CORPORATION.

Gallien TECHNOLOGY
2240 PARAGON DRIVE
SAN JOSE, CA 95131

APPROVALS

	INIT	DATE
DESIGNED:		
DRAWN:		09/18/97
ELEC:		
MECH:		
Q/A:		
RELEASED:		

UNLESS OTHERWISE INDICATED DIMENSIONS SHOWN ARE IN INCHES
TOLERANCES
FRACTION ±
ANGLES ±
.XX ± 0.01
.XXX ± 0.005
MATERIAL: (SEE NOTE 1)
FINISH: (SEE NOTE 1)

TITLE: TRANSFORMER SIG2.1 (230V)

SIZE	DRAWING NUMBER	REVISION
A	408-0011-B	B
	PART NUMBER: 080-0011-A	

FILENAME: 811B.DWG (AUTOCAD)

SCALE: 1/1 SHEET 1 OF 2

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED	BILL / OPER / KIT / LTO / SCRAP / DWG / REMARK	UM / ECN	TYPE / ST
ASM: HA302-1010-A		SIG 2.1 230V	A1	EA	M A
1.....	080-0011-A	TRANSFORMER SIG 2.1,230V,TO EN SP 1.000000 EP	0 0 0.0 A	EA	B A
1.....	091-0000-0	FUSE,5MM,.5A,250V,SLB,SEMKO,VDE 1.000000 EP	0 0 0.0 0	EA	B A
1.....	091-0019-0	FUSE,5MM,5A,250V,SLB,UL,SEMKO 11.000000 EP	0 0 0.0 0	EA	B A
1.....	092-0061-0	FASTON,F,V,.250X.205,14-16GA,BLU 1.000000 EP	0 0 0.0 0	EA	B A
1.....	092-0068-0	FASTON,F,V,.187X.205,14-16GA,BLU 1.000000 EP	0 0 0.0	EA	B A
1.....	095-0009-0	CORD,2X.75MM,10A/250V,VDE,EXP 1.000000 EP	0 0 0.0	EA	B A
1.....	095-1002-0	WIRE 26 AWG,BLK,7 STRAND,UL1061 12.250000 EP	0 0 0.0	1 FT	B A
1.....	100-0005-0	FASTENER,PUSH IN,NYLON 10.000000 EP	0 0 0.0	EA	B A
1.....	100-0013-0	STRAIN RELIEF,18/2,SVT,BLK,UL,CSA 1.000000 EP	0 0 0.0	EA	B A
1.....	100-0035-0	CABLE TIE,BLACK,4"-18 LB 10.000000 EP	0 0 0.0	EA	B A
1.....	100-0126-0	HOLDER,CABLE TIE .75" SQUARE,ADHE 5.000000 EP	0 0 0.0	EA	B A
1.....	101-0002-0	FOOT BLACK ANODIZED/RUBBER GASKET 4.000000 EP	0 0 0.0	EA	B A
1.....	102-0003-0	BUTTON CAP, LOUDNESS, H/K 1.000000 EP	0 0 0.0	EA	B A
1.....	105-0007-0	INSULATOR TUBE 1.000000 EP	0 0 0.0	EA	B A
1.....	105-0009-0	INSULATOR TAPE,3/4"X7 MIL ADHESIV 4.000000 EP	0 0 0.0	EA	B A
1.....	111-0051-0	BOLT,4-40,5/16,PHP,CAD 2.000000 EP	0 0 0.0 0	EA	B A

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED	BILL	OPER	KIT	LTO	SCRAP	DWG / REMARK	UM	ECN	TYPE ST
			START/END								
ASM: HA302-1010-A		SIG 2.1 230V						A1	EA		M A
1.....	111-0061-0	BOLT,4-40,3/8,PHP,CAD							EA		B
		2.000000 EP		0		0	0.0	0			A
1.....	111-0101-0	BOLT,4-40,5/8,PHP,CAD.							EA		B
		18.000000 EP		0		0	0.0	0			A
1.....	111-3080-0	SCREW,4AB,1/2,PHP,B.Z.							EA		B
		5.000000 EP		0		0	0.0	0			A
1.....	111-7011-0	WASHER,#4,SPLIT							EA		B
		93.000000 EP		0		0	0.0	0			A
1.....	111-8061-0	TR-BOLT,4-40,3/8,PHP,CAD							EA		B
		43.000000 EP		0		0	0.0	0			A
1.....	111-8081-0	TR-BOLT,4-40,1/2,PHP,CAD							EA		B
		30.000000 EP		0		0	0.0	0			A
1.....	112-0040-0	BOLT,6-32,1/4,PHP,ZINC							EA		B
		4.000000 EP		0		0	0.0				A
1.....	112-3080-0	SCREW,6AB,1/2,PHP,B.Z.							EA		B
		5.000000 EP		0		0	0.0	0			A
1.....	112-7001-0	WASHER,#6,FLAT,CAD							EA		B
		4.000000 EP		0		0	0.0	0			A
1.....	112-7021-0	WASHER,#6,SPLIT ZINC							EA		B
		4.000000 EP		0		0	0.0	0			A
1.....	112-8050-0	TR-BOLT,6-32,5/16,PHP,BO							EA		B
		27.000000 EP		0		0	0.0	0			A
1.....	150-0089-0	BAG POLY 24X30 3 MIL WITH VENT HO							EA		B
		1.000000 EP		0		0	0.0				A
1.....	150-0103-0	BAG,POLY 9"X12"X2MIL CLEAR							EA		B
		1.000000 EP		0		0	0.0	0			A
1.....	152-0002-0	BAG,4"X16",FOR PWR CORD							EA		B
		1.000000 EP		0		0	0.0				A
1.....	153-0000-0	TIE WRAP,BLACK							EA		B
		1.000000 EP		0		0	0.0				A
1.....	153-0100-0	SAFETY LABEL(RISK OF FIRE)NORMAL							EA		B
		1.000000 EP		0		0	0.0				A

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED	BILL / START/END	OPER	KIT	LTO	SCRAP	DWG / REMARK	UM	ECN	TYPE ST
ASM: HA302-1010-A		SIG 2.1 230V						A1	EA		M A
1.....	160-0005-0	GROUNDING SAFETY SHEET							EA		B
		1.000000 EP		0		0	0.0	0			A
1.....	HA132-0008-A	SIG 2.1 REAR PANEL (230V)							EA		M
		1.000000 EP		0		0	0.0	A			A
.2.....	120-0019-0	STEEL,18 GA.EGC .047 48X120 FPR							EA		B
		198.000000 EP		0		0	10.0	0			A
1.....	HA132-0009-A	SIG 2.1, FIN PLATE							EA		M
		28.000000 EP		0		0	0.0	A			A
.2.....	120-0002-1	ALUM .080,5052-H32,6.00X5.15 +/-							EA		B
		1.000000 EP		0		0	10.0				A
1.....	HA132-0010-B	SIG 2.1 FRONT PANEL,FINISHED							EA		B
		1.000000 EP		0		0	0.0	B			A
1.....	HA132-0012-B	SIG 2.1 CHASSIS							EA		M
		1.000000 EP		0		0	0.0	B			A
.2.....	111-6036-0	NUT,PEM,S-440-1 FOR .040 MIN. THK							EA		B
		4.000000 EP		0		0	15.0	0			A
.2.....	112-6009-0	STANDOFF,SO-6440-24							EA		B
		14.000000 EP		0		0	15.0				A
.2.....	120-0019-0	STEEL,18 GA.EGC .047 48X120 FPR							EA		B
		480.000000 EP		0		0	10.0	0			A
1.....	HA132-0014-B	SIG 2.1 TOP COVER							EA		M
		1.000000 EP		0		0	0.0	B			A
.2.....	120-0012-0	STEEL,20 GA.036 EGC 48X120							EA		B
		615.000000 EP		0		0	10.0	0			A
1.....	HA132-0015-B	SIG 2.1 CROSS BRACE							EA		M
		1.000000 EP		0		0	0.0	B			A
.2.....	120-0008-0	STEEL,16 GA.EGC. 48X120							EA		B
		198.000000 EP		0		0	0.0	0			A
1.....	HA132-0016-B	SIG 2.1 SINK PLATE							EA		M
		1.000000 EP		0		0	0.0	B			A
.2.....	129-0003-A	PA5800 SINK PLATE BLANK 16.7000"							EA		B
		1.000000 EP		0		0	10.0	A			A

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED	BILL / START/END	OPER	KIT	LTO	SCRAP	DWG / REMARK	UM	ECN	TYPE ST
ASM: HA302-1010-A		SIG 2.1 230V						A1	EA		M A
1.....	HA132-0021-A	LOGO,SIGNATURE SERIES,ACRYLIC							EA		B
		1.000000 EP		0		0	0.0				A
1.....	HA150-0001-A	SIG 2.1 CARTON							EA		B
		1.000000 EP		0		0	0.0				A
1.....	HA151-0002-A	SIG 2.1/1.5 FOAM PACK							S2		B
		1.000000 EP		0		0	0.0				A
1.....	HA153-0102-0	LABEL,UPC,230V,SIG 2.1							EA		B
		2.000000 EP		0		0	0.0				A
1.....	HA160-0006-A	SIG 2.1/230V OWNER'S MANUAL							EA		B
		1.000000 EP		0		0	0.0	A			A
1.....	HA202-0003-A	WIRE ASSY,26GA,BLK,9",2PIN,UL/CSA							EA		B
		1.000000 EP		0		0	0.0	A			A
.2.....	093-1000-0	HSG,2MMX2,26GA,IDC							EA		B
		2.000000 EP		0		0	0.0				A
.2.....	095-1002-0	WIRE 26 AWG,BLK,7 STRAND,UL1061							1 FT		B
		1.340000 EP		0		0	0.0				A
1.....	HA202-0004-A	WIRE ASSY,26GA,BLK,7",7PIN,UL/CSA							EA		B
		1.000000 EP		0		0	0.0	A			A
.2.....	093-2500-0	HSG,2MMX7,26GA,IDC							EA		B
		2.000000 EP		0		0	0.0				A
.2.....	095-1002-0	WIRE 26 AWG,BLK,7 STRAND,UL1061							1 FT		B
		4.670000 EP		0		0	0.0				A
1.....	HA202-0005-A	WIRE ASSY,26GA,BLK,18.5",5PIN,UL/							EA		B
		1.000000 EP		0		0	0.0	A			A
.2.....	093-1003-0	HSG,2MMX5,26GA,IDC							EA		B
		2.000000 EP		0		0	0.0				A
.2.....	095-1002-0	WIRE 26 AWG,BLK,7 STRAND,UL1061							1 FT		B
		6.250000 EP		0		0	0.0				A
1.....	HA206-1002-B	SIG 2.1 POWER AMP BOARD,230V							EA		M
		1.000000 EP		0		0	0.0	B			A
.2.....	010-0001-0	2SC3478,NPN,180V,100MA							EA		B
		15.000000 EP		0		0	0.0	0			A

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED	BILL	OPER	KIT	LTO	SCRAP	DWG / REMARK	UM	ECN	TYPE ST
			START/END								
ASM: HA302-1010-A		SIG 2.1 230V						A1	EA	M	A
.2.....	010-0001-0	2SC3478,NPN,180V,100MA							EA	B	
		15.000000 EP		0		0	0.0	0			A
		REF: Q2,16,17,29,31,32,51,53,54,73,									
		REF: 75,76,95,97,98									
.2.....	010-0003-0	2SC3502-F,NPN,200V,100MA,TO-126							EA	B	
		5.000000 EP		0		0	0.0				A
		REF: Q13,44,66,88,110									
.2.....	010-0010-0	2SC2240,NPN,120V,100MA,TO-92							EA	B	
		10.000000 EP		0		0	0.0				A
		REF: Q21,22,30,45,52,67,74,89,96,111									
.2.....	010-0012-0	MPSA06 NPN 80V 500MA TO-92							EA	B	
		10.000000 EP		0		0	0.0	0			A
		REF: Q20,23,27,28,49,50,71,72,93,94									
.2.....	010-1002-0	2SA1376,PNP,180V,100MA,TO-92							EA	B	
		15.000000 EP		0		0	0.0	0			A
		REF: Q12,18,19,34,35,36,56,57,58,78,									
		REF: 79,80,100,101,102									
.2.....	010-1003-0	2SA1380-F,PNP,200V,100MA,TO-126							EA	B	
		5.000000 EP		0		0	0.0	0			A
		REF: Q15,43,65,87,109									
.2.....	010-1013-0	MPSA56 PNP 80V 500MA TO-92							EA	B	
		6.000000 EP		0		0	0.0	0			A
		REF: Q1,14,33,55,77,99									
.2.....	012-0002-0	2SC4793 NPN 200V 1.5A 2-10R1A							EA	B	
		10.000000 EP		0		0	0.0	0			A
		REF: Q10,11,24,25,46,47,68,69,90,91									
.2.....	012-0003-0	2SC5242,NPN,230V,15A,2-16C1A							EA	B	
		15.000000 EP		0		0	0.0	0			A
		REF: Q4,6,8,40,41,42,62,63,64,84,85,									
		REF: 86,106,107,108									
.2.....	012-1002-0	2SA1837 PNP 200V 1.5A 2-10R1A							EA	B	
		5.000000 EP		0		0	0.0	0			A
		REF: Q9,26,48,70,92,									
.2.....	012-1003-0	2SA1962,PNP,230V,15A,2-16C1A							EA	B	
		15.000000 EP		0		0	0.0	0			A
		REF: Q3,5,7,37,38,39,59,60,61,81,82									
		REF: 83,103,104,105									

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED	BILL / START/END	OPER	KIT	LTO	SCRAP	DWG / REMARK	UM	ECN	TYPE / ST
ASM: HA302-1010-A		SIG 2.1 230V						A1	EA		M / A
.2.....	020-1000-0	1N4148 ,RECT-FAST,200MA,100V,4NS,							EA		B
		25.000000 EP	0		0		0.0	AI			A
		REF: D1,4,5,6,7,10,11,12,13,14,17,									
		REF: 18,19,20,21,24,25,26,27,28,31,									
		REF: 32,33,34,35									
.2.....	020-2106-0	1N4004,RECT,1A,150V,DO-41							EA		B
		10.000000 EP	0		0		0.0				A
		REF: D2,3,8,9,15,16,22,23,29,30									
.2.....	023-0004-0	BRIDGE,8A,200V,VERT,PC							EA		B
		5.000000 EP	0		0		0.0				A
		REF: BR1,2,3,4,5									
.2.....	025-0012-0	LED,RED/GRN,5MM,630NM/560NM,15MCD							EA		B
		1.000000 EP	0		0		0.0	0			A
.2.....	030-2102-0	CAP,CER,AX,102,10%,50V,X7R							EA		B
		10.000000 EP	0		0		0.0	AI			A
		REF: C13,14,34,37,55,56,76,79,97,100									
.2.....	030-2104-0	CAP,CER,AX,104,10%,50V,X7R							EA		B
		1.000000 EP	0		0		0.0	AI			A
		REF: C1									
.2.....	030-2271-0	CAP,CER AXIAL,271,10%,50V,NPO							EA		B
		15.000000 EP	0		0		0.0	AI			A
		REF: C19,20,21,36,35,38,57,56,									
		REF: 59,77,78,80,98,99,101									
.2.....	030-4104-0	CAP,CER AXIAL,104,10%,100V,X7R							EA		B
		20.000000 EP	0		0		0.0	AI			A
		REF: C4,6,7,8,40,41,42,43,61,62,63,64									
		REF: 82,83,84,85,103,104,105,106									
.2.....	031-0477-0	CAP,ELEC,RAD,477,20%,10V							EA		B
		10.000000 EP	0		0		0.0	0			A
		REF: C16,17,23,25,44,46,65,67,86,88									
.2.....	031-2106-0	CAP,ELEC,RAD,106,-10%+50%,50V							EA		B
		10.000000 EP	0		0		0.0	0			A
		REF: C5,10,32,33,53,54,74,75,95,96									
.2.....	031-3129-0	CAP,ELEC,RAD,129,20%,63V							EA		B
		10.000000 EP	0		0		0.0	0			A
		REF: C2,3,30,31,51,52,72,73,93,94									

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED	BILL	OPER	KIT	LTO	SCRAP	DWG / REMARK	UM	TYPE	ECN	ST
		START/END										
ASM: HA302-1010-A		SIG 2.1 230V							EA	M	A1	A
.2.....	031-3476-0	CAP,ELEC,RAD,476,20%,63V							EA	B		
		10.000000 EP	0		0		0.0					A
		REF: C11,15,24,26,45,47,66,68,87,89										
.2.....	032-4104-0	CAP,PE,104,10%,100V							EA	B		
		5.000000 EP	0		0		0.0	0				A
		REF: C18,29,50,71,92										
.2.....	035-8100-0	CAP,MICA,10PF,5%,500V							EA	B		
		5.000000 EP	0		0		0.0					A
		REF: C12,28,49,70,91										
.2.....	035-8271-0	CAP,PE/MICA,271,5%,100/500V							EA	B		
		5.000000 EP	0		0		0.0					A
		REF: C9,27,48,69,90										
.2.....	050-0101-0	RES,CARBON FILM,10 OHM,1/8W,5%							EA	B		
		10.000000 EP	0		0		0.0	AI				A
		REF: R37,41,69,70,117,118,165,166,213										
		REF: 214										
.2.....	050-0471-0	RES,CARBON FILM,47 OHM,1/8W,5%							EA	B		
		10.000000 EP	0		0		0.0	AI				A
		REF: R29,38,65,66,113,114,161,162,										
		REF: 209,210										
.2.....	050-1001-0	RES,CARBON FILM,100 OHM,1/8W,5%							EA	B		
		31.000000 EP	0		0		0.0	AI				A
		REF: R1,10,18,20,21,44,47,71,72,76,77										
		REF: 78,79,119,120,124,125,126,127,										
		REF: 167,168,172,173,174,175,215,216										
		REF: 220,221,222,223										
.2.....	050-1002-0	RES,CARBON FILM,1K OHM,1/8W,5%							EA	B		
		25.000000 EP	0		0		0.0	AI				A
		REF: R23,27,45,48,50,64,83,84,85,86										
		REF: 112,131,132,133,134,160,179,180,										
		REF: 181,182,208,227,228,229,230										
.2.....	050-1003-0	RES,CARBON FILM,10K OHM,1/8W,5%							EA	B		
		17.000000 EP	0		0		0.0	AI				A
		REF: R2,3,24,28,67,68,115,116,163,164										
		REF: 211,212,11,74,122,170,218										
.2.....	050-1004-0	RES,CARBON FILM,100K OHM,1/8W,5%							EA	B		
		5.000000 EP	0		0		0.0	AI				A
		REF: R53,97,145,193,241										

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED / START/END	BILL	OPER	KIT	LTO	SCRAP	DWG / REMARK	UM	TYPE / ECN	ST
ASM: HA302-1010-A		SIG 2.1 230V						A1	EA	M	A
.2.....	050-1202-0	RES,CARBON FILM,1.2K OHM,1/8W,5%							EA	B	
		5.000000 EP	0		0		0.0	AI			A
		REF: R30,63,111,159,207									
.2.....	050-1801-0	RES,CARBON FILM,180 OHM,1/8W,5%							EA	B	
		5.000000 EP	0		0		0.0	AI			A
		REF: R42,46,49,80,81,82,128,129,130,									
		REF: 176,177,178,224,225,226									
.2.....	050-3302-0	RES,CARBON FILM,3.3K OHM,1/8W,5%							EA	B	
		1.000000 EP	0		0		0.0	AI			A
		REF: R 4									
.2.....	050-4701-0	RES,CARBON FILM,470 OHM,1/8W,5%							EA	B	
		30.000000 EP	0		0		0.0	AI			A
		REF: R31,32,33,34,35,36,90,91,92,93,									
		REF: 94,95,138,139,140,141,142,143,									
		REF: 186,187,188,189,190,191,234,235									
		REF: 236,237,238,239									
.2.....	050-4703-0	RES,CARBON FILM,47K OHM,1/8W,5%							EA	B	
		16.000000 EP	0		0		0.0	AI			A
		REF: R5,12,43,61,62,109,110,157,158									
		REF: 205,206,7,73,121,169,217									
.2.....	050-5602-0	RES,CARBON FILM,5.6K OHM,1/8W,5%							EA	B	
		5.000000 EP	0		0		0.0	AI			A
		REF: R 26,75,123,171,219									
.2.....	050-7500-0	RES,CARBON FILM,75 OHM,1/8W,5%							EA	B	
		5.000000 EP	0		0		0.0				A
		REF: R25,89,137,185,233									
.2.....	051-2701-0	RES,CARBON FILM,270 OHM,1/4W,5%							EA	B	
		2.000000 EP	0		0		0.0	AI			A
.2.....	054-.220-0	RES,WIRE WOUND,.22 OHM,1W,5%							EA	B	
		30.000000 EP	0		0		0.0				A
		REF: R13,14,15,16,17,18,54,56,57,									
		REF: 58,59,60,102,104,105,106,107,108									
		REF: 150,152,153,154,155,156,198,200									
		REF: 201,202,203,204									
.2.....	055-0101-0	RES,METAL OXIDE,10 OHM,2W,5%							EA	B	
		5.000000 EP	0		0		0.0	0			A
		REF: R6,99,147,195,243									

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED / BILL / OPER / KIT / LTO / SCRAP / DWG / REMARK	UM	TYPE / ECN / ST
ASM: HA302-1010-A		SIG 2.1 230V	EA	M
			A1	A
.2.....	055-0510-0	RES,METAL OXIDE,5.1 OHM,2W,5%	EA	B
		5.000000 EP 0 0 0.0		A
		REF: R39,98,146,194,242		
.2.....	055-6802-0	RES,METAL OXIDE,6.8K,2W,5%	EA	B
		10.000000 EP 0 0 0.0		A
		REF: R8,9,100,101,148,149,196,197,244		
		REF: 245		
.2.....	060-1072-0	RES,METAL FILM,1.07 K OHMS,1/8W,1	EA	B
		5.000000 EP 0 0 0.0		A
		REF: R 52,96,144,192,240		
.2.....	060-3323-0	RES,METAL FILM,33.2K OHM,1/8W,1%	EA	B
		10.000000 EP 0 0 0.0 AI		A
		REF: R40,51,87,88,135,136,183,184,		
		REF: 231,232		
.2.....	070-0520-0	POT,500 OHM TRIM,.375 ROUND,SLOT,	EA	B
		5.000000 EP 0 0 0.0 0		A
		REF: R22,55,103,151,199		
.2.....	081-0032-0	INDUCTOR .4 UH WITH 1 OHM 2W RESI	EA	B
		5.000000 EP 0 0 0.0		A
		REF: RL1,2,3,4,5		
.2.....	081-0057-0	INDUCTOR,2UH,7A,2743002112 FERRIT	EA	B
		10.000000 EP 0 0 0.0 AI		A
		REF: L1,2,3,4,5,6,7,8,9,10		
.2.....	091-1003-0	THRM BRKR 100C +/-5,0-DIFF,PC	EA	B
		1.000000 EP 0 0 0.0		A
		REF: TH 1		
.2.....	092-0012-1	BINDING POST,X2,H,PC,GOLD,3.2,SEM	EA	B
		5.000000 EP 0 0 0.0		A
		REF: J 2,5,7,9,11		
.2.....	092-0022-0	JACK,PHONE,3.5 MM,H,PC	EA	B
		1.000000 EP 0 0 0.0		A
		REF: J1		
.2.....	092-0032-0	JACK,RCAX1,H,GOLD,WT,SWITCH T/S	EA	B
		5.000000 EP 0 0 0.0		A
		REF: J3,4,6,8,10		

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED	BILL	OPER	KIT	LTO	SCRAP	DWG / REMARK	UM	ECN	TYPE ST
		START/END									
ASM:	HA302-1010-A	SIG 2.1 230V						A1	EA		M A
.2.....	093-0025-0	HDR,.1X2,VERT,MALE,LOCK,GOLD							EA		B
		5.000000 EP		0		0	0.0				A
		REF: P2,4,6,8,10									
.2.....	093-0080-0	HDR,.156X3,VERT,MALE,LOCK,SQR PIN							EA		B
		5.000000 EP		0		0	0.0	0			A
		REF: P1,5,7,9,11									
.2.....	093-2005-0	HDR,2MMX7,VERT,SHROUDED							EA		B
		1.000000 EP		0		0	0.0				A
.2.....	094-0004-0	FUSE CLIP,5MM, P.C. MOUNT							EA		B
		20.000000 EP		0		0	0.0	0			A
.2.....	105-0007-0	INSULATOR TUBE							EA		B
		1.000000 EP		0		0	0.0				A
.2.....	153-0105-0	LABEL,BLANK,.9"X.25"							EA		B
		1.000000 EP		0		0	0.0				A
.2.....	HA145-0002-B	SIG 2.1 POWER AMP BOARD							EA		B
		1.000000 EP		0		0	0.0	B			A
.2.....	HA153-0104-0	LABEL,PWR AMP BD,230V,SIG 2.1							EA		M
		1.000000 EP		0		0	0.0	A			A
1.....	HA206-1003-B	SIG 2.1 POWER SWITCH BOARD,230V							EA		M
		1.000000 EP		0		0	0.0	B			A
.2.....	001-0005-0	LM393N, DUAL COMPARATOR, 8 PIN DI							EA		B
		1.000000 EP		0		0	0.0				A
		REF: U1									
.2.....	001-2009-0	LM556CN DUAL TIMER							EA		B
		1.000000 EP		0		0	0.0	0			A
		REF: U2									
.2.....	010-0012-0	MPSA06 NPN 80V 500MA TO-92							EA		B
		5.000000 EP		0		0	0.0	0			A
		REF: Q2,3,4,7,8									
.2.....	010-1013-0	MPSA56 PNP 80V 500MA TO-92							EA		B
		3.000000 EP		0		0	0.0	0			A
		REF: Q1,5,6									
.2.....	020-0004-0	1N755A,ZENER,7.5V,500MW,DO-35							EA		B
		1.000000 EP		0		0	0.0				A

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED	BILL / OPER / KIT / LTO / SCRAP / DWG / REMARK	UM	TYPE / ECN / ST
ASM: HA302-1010-A		SIG 2.1 230V	A1	EA	M A
.2.....	020-0004-0	1N755A,ZENER,7.5V,500MW,DO-35		EA	B
		1.000000 EP	0 0 0.0		A
		REF: D 28			
.2.....	020-1000-0	1N4148 ,RECT-FAST,200MA,100V,4NS,		EA	B
		12.000000 EP	0 0 0.0 AI		A
		REF: D5,6,8,9,10,11,12,13,14,15,16,27			
.2.....	020-2106-0	1N4004,RECT,1A,150V,DO-41		EA	B
		5.000000 EP	0 0 0.0		A
		REF: D1,2,3,4,7			
.2.....	022-3001-0	THERMISTOR,120 OHM,2AMP,CL-90		EA	B
		1.000000 EP	0 0 0.0		A
.2.....	025-0012-0	LED,RED/GRN,5MM,630NM/560NM,15MCD		EA	B
		1.000000 EP	0 0 0.0 0		A
		REF: D26			
.2.....	025-0030-0	LED,BLUE,T1,.190,470NM,SMALL		EA	B
		9.000000 EP	0 0 0.0		A
		REF: D17,18,19,20,21,22,23,24,25			
.2.....	030-2103-0	CAP,CER,AX,103,10%,50V,X7R		EA	B
		2.000000 EP	0 0 0.0 AI		A
		REF: C13,14			
.2.....	030-2104-0	CAP,CER,AX,104,10%,50V,X7R		EA	B
		5.000000 EP	0 0 0.0 AI		A
		REF: C2,3,5,9,11			
.2.....	031-0106-1	CAP,ELEC,RAD,106,20%,25V,NP		EA	B
		1.000000 EP	0 0 0.0		A
		REF: C10			
.2.....	031-0107-0	CAP,ELEC,RAD,107,-10%+50%,16V		EA	B
		4.000000 EP	0 0 0.0 0		A
		REF: C6,7,8,12			
.2.....	031-0108-0	CAP,ELEC,RAD,108,-10%+50%,16V		EA	B
		1.000000 EP	0 0 0.0 0		A
		REF: C4			
.2.....	034-7103-0	CAP,CERAMIC DISK,103,10%,X-250V		EA	B
		1.000000 EP	0 0 0.0 0		A
		REF: C1			

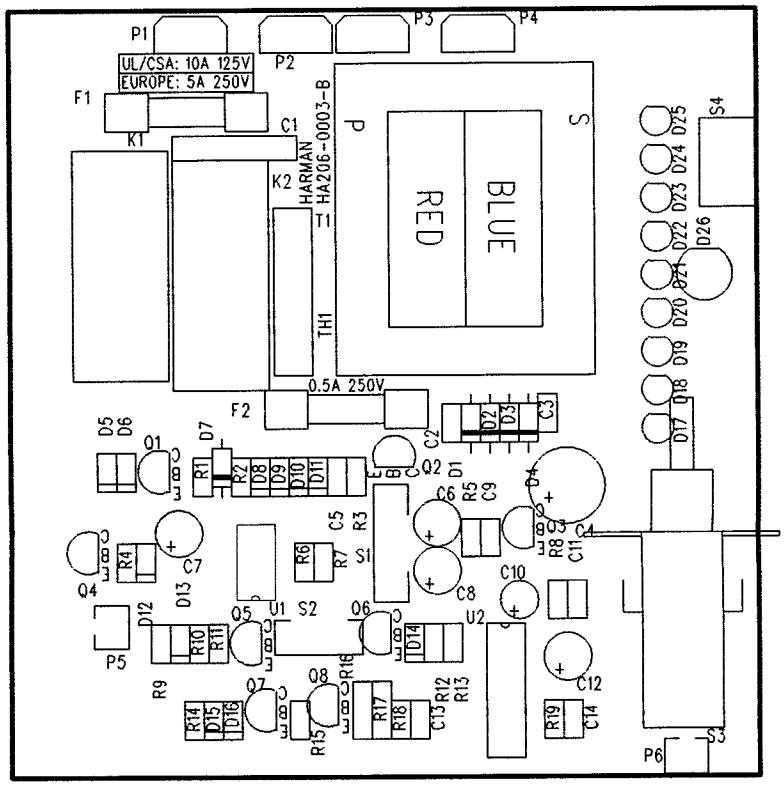
PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED	BILL	OPER	KIT	LTO	SCRAP	DWG / REMARK	UM	ECN	TYPE ST
			START/END								
ASM: HA302-1010-A		SIG 2.1 230V						A1	EA		M A
.2.....	050-0750-0	RES,CARBON FILM,7.5 OHM, 1/8W,5%							EA		B
		1.000000 EP		0		0	0.0				A
		REF: R 14									
.2.....	050-1003-0	RES,CARBON FILM,10K OHM,1/8W,5%							EA		B
		9.000000 EP		0		0	0.0	AI			A
		REF: R1,2,5,9,10,15,18,20,22									
.2.....	050-1004-0	RES,CARBON FILM,100K OHM,1/8W,5%							EA		B
		4.000000 EP		0		0	0.0	AI			A
		REF: R3,4,6,19									
.2.....	050-4702-0	RES,CARBON FILM,4.7K OHM,1/8W,5%							EA		B
		2.000000 EP		0		0	0.0	AI			A
		REF: R11,12									
.2.....	050-4703-0	RES,CARBON FILM,47K OHM,1/8W,5%							EA		B
		2.000000 EP		0		0	0.0	AI			A
		REF: R 8,13									
.2.....	051-1502-0	RES,CARBON FILM,1.5K OHM,1/4W,5%							EA		B
		1.000000 EP		0		0	0.0	AI			A
		REF: R 17									
.2.....	051-2202-0	RES,CARBON FILM,2.2K OHM,1/4W,5%							EA		B
		1.000000 EP		0		0	0.0	AI			A
		REF: R 16									
.2.....	080-0003-A	TRANSFORMER STANDBY,230V 10V@.35A							EA		B
		1.000000 EP		0		0	0.0	A			A
.2.....	084-0001-0	RELAY SPNO 12VDC,20A/125VAC,TV-10							EA		B
		2.000000 EP		0		0	0.0				A
		REF: K1,2									
.2.....	090-0007-0	SWITCH,8A/128A,250V,PP,PCB							EA		B
		1.000000 EP		0		0	0.0				A
		REF: S3									
.2.....	092-0010-0	FASTON,M,PC,.25"							EA		B
		3.000000 EP		0		0	0.0				A
		REF: P1,3,4									
.2.....	092-0024-0	FASTON,M,PC,.187"							EA		B
		1.000000 EP		0		0	0.0				A
		REF: P2									

PDRIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

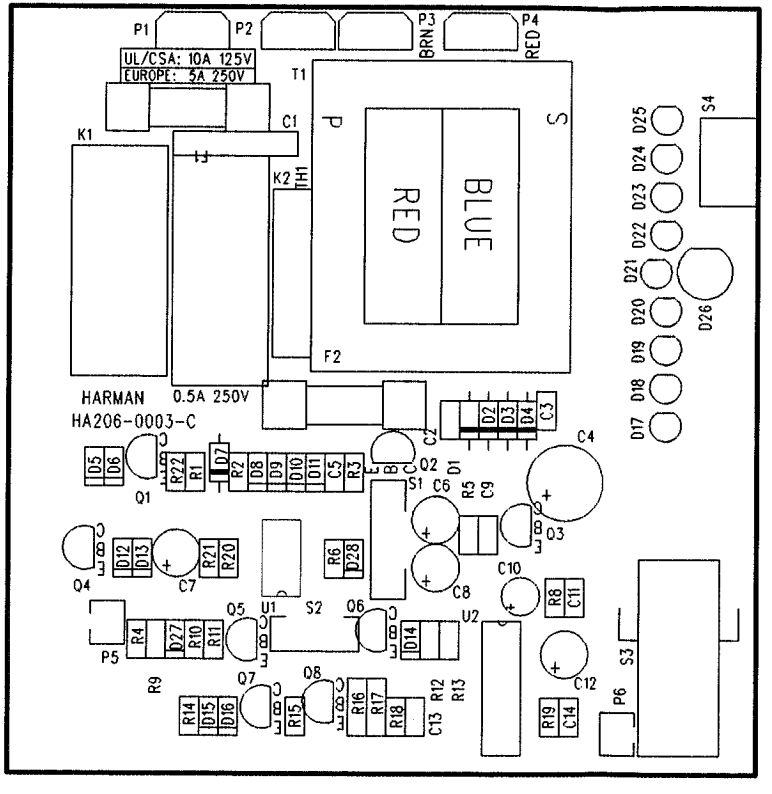
LEVEL	COMPONENT ID / ITEM	DESCRIPTION / REQUIRED	BILL	OPER	KIT	LTO	SCRAP	DWG / REMARK	UM	ECN	TYPE	ST
ASM:	HA302-1010-A	SIG 2.1 230V						A1	EA		M	A
.2.....	093-0049-0	HDR,2MMX5,HORIZ,MALE,LOCK							EA		B	
		1.000000 EP		0		0	0.0					A
		REF: S4										
.2.....	093-0051-0	HDR,2MMX2,VERT,MALE,LOCK							EA		B	
		2.000000 EP		0		0	0.0					A
		REF: P5, P6										
.2.....	093-0151-0	HDR,2MMX5,VERT,MALE,LOCKING							EA		B	
		1.000000 EP		0		0	0.0					A
		REF: S2										
.2.....	093-2005-0	HDR,2MMX7,VERT,SHROUDED							EA		B	
		1.000000 EP		0		0	0.0					A
		REF: S1										
.2.....	094-0004-0	FUSE CLIP,5MM, P.C. MOUNT							EA		B	
		2.000000 EP		0		0	0.0	0				A
.2.....	153-0105-0	LABEL,BLANK,.9"X.25"							EA		B	
		1.000000 EP		0		0	0.0					A
.2.....	HA145-0003-B	SIG 2.1 POWER SWITCH BOARD							EA		B	
		1.000000 EP		0		0	0.0	B				A

1 ASSEMBLIES PRINTED



GALLIEN TECHNOLOGY 2240 PARAGON, SAN JOSE, CA 95131 408-441-8081	MODEL #: PA2.1	DATE: 6/4/97	DESCRIPTION: PA2.1 POWER SWITCH BD.
PCB LAYOUT DRAWING #: HA405-0003-B	DBF: HA503B	DESIGNED BY: K. ROBERTSON	PART #: HA145-0003-B

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:
	3		7/02/97



TOP SIDE SILKSCREEN

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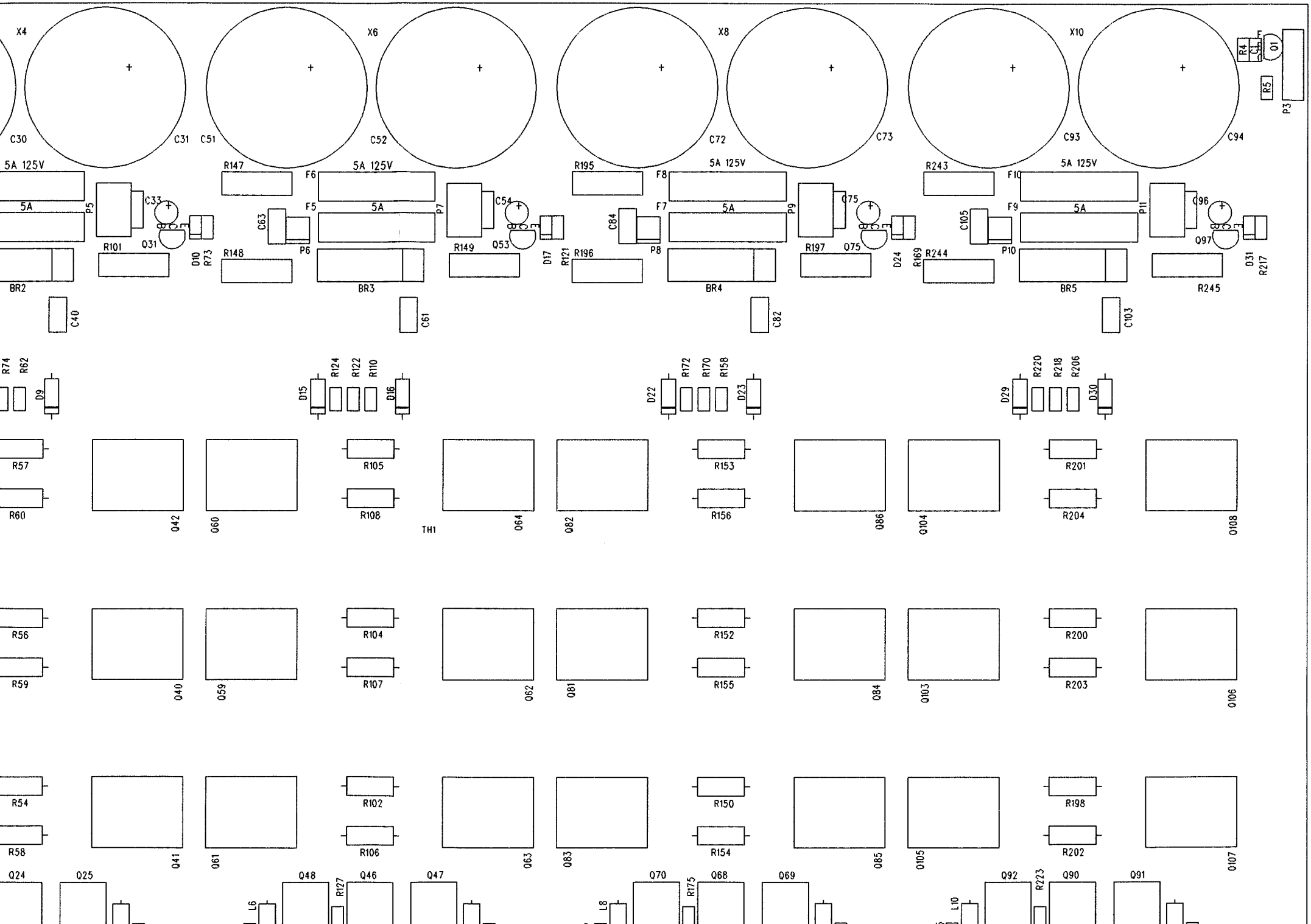
Gallien TECHNOLOGY

2240 PARAGON DRIVE
SAN JOSE, CA 95131
408-441-8081

TITLE: SIG 2.1 POWER SWITCH BD.

APPROVALS		
	INIT	DATE
DESIGNED:	K. ROBERTSON	11/13/97
DRAWN:	PHUOC DO	
ELEC:		
MECH:		
Q/A:		
RELEASED:		

SIZE:	DRAWING NO:	REV:
B	HA405-0003-C	C
	PART NO: HA145-0003-C	
MODEL #: SIG 2.1	DBF: HA503C	
SCALE: 1/1	SHEET: OF	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R195
R243
F6
F8
F10
F5
F7
F9
P5
P6
P7
P8
P9
P10
P11
C33
C54
C63
C84
C105
C75
C96
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C82
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R4
R5
Q1
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R62
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D23
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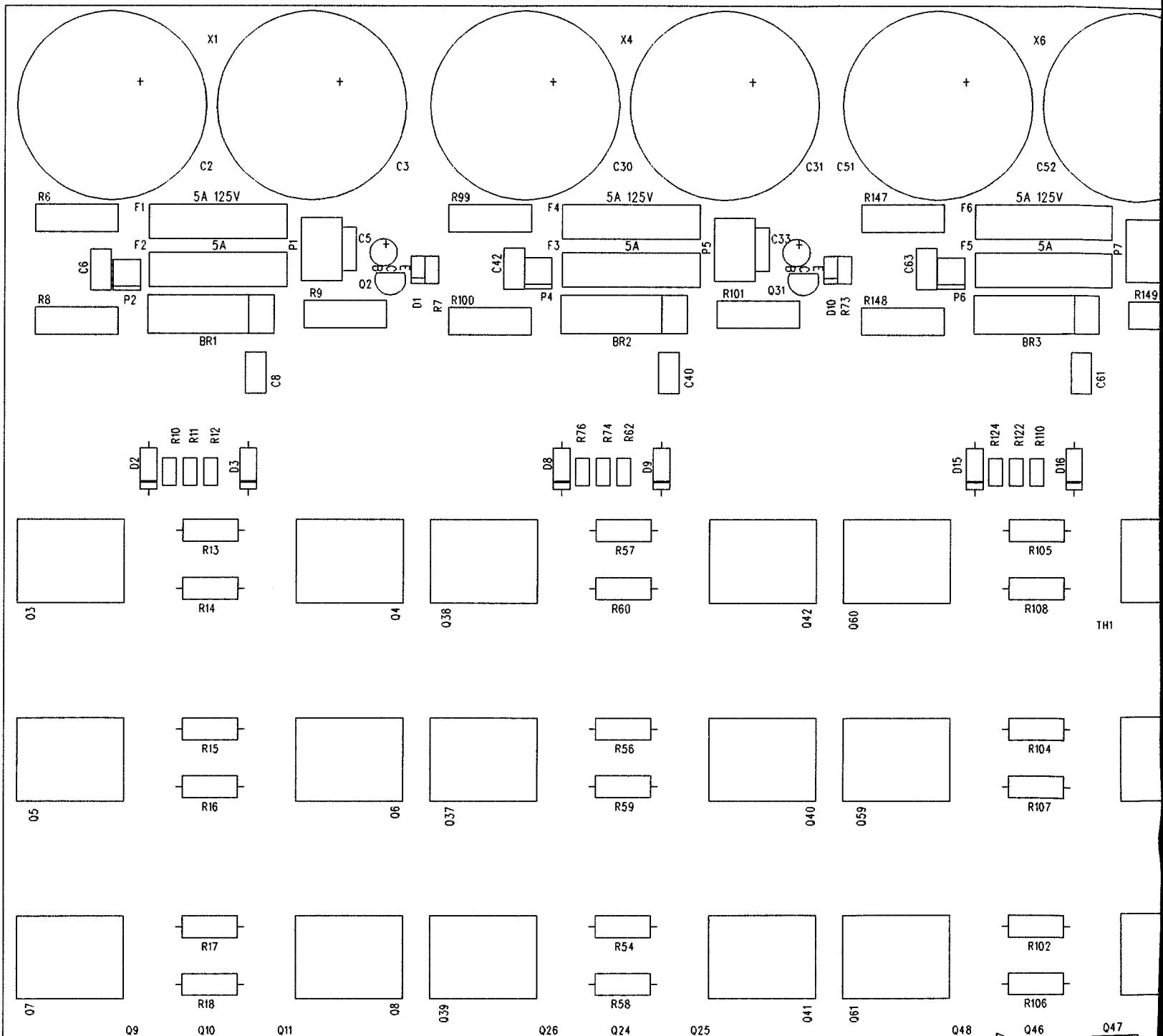
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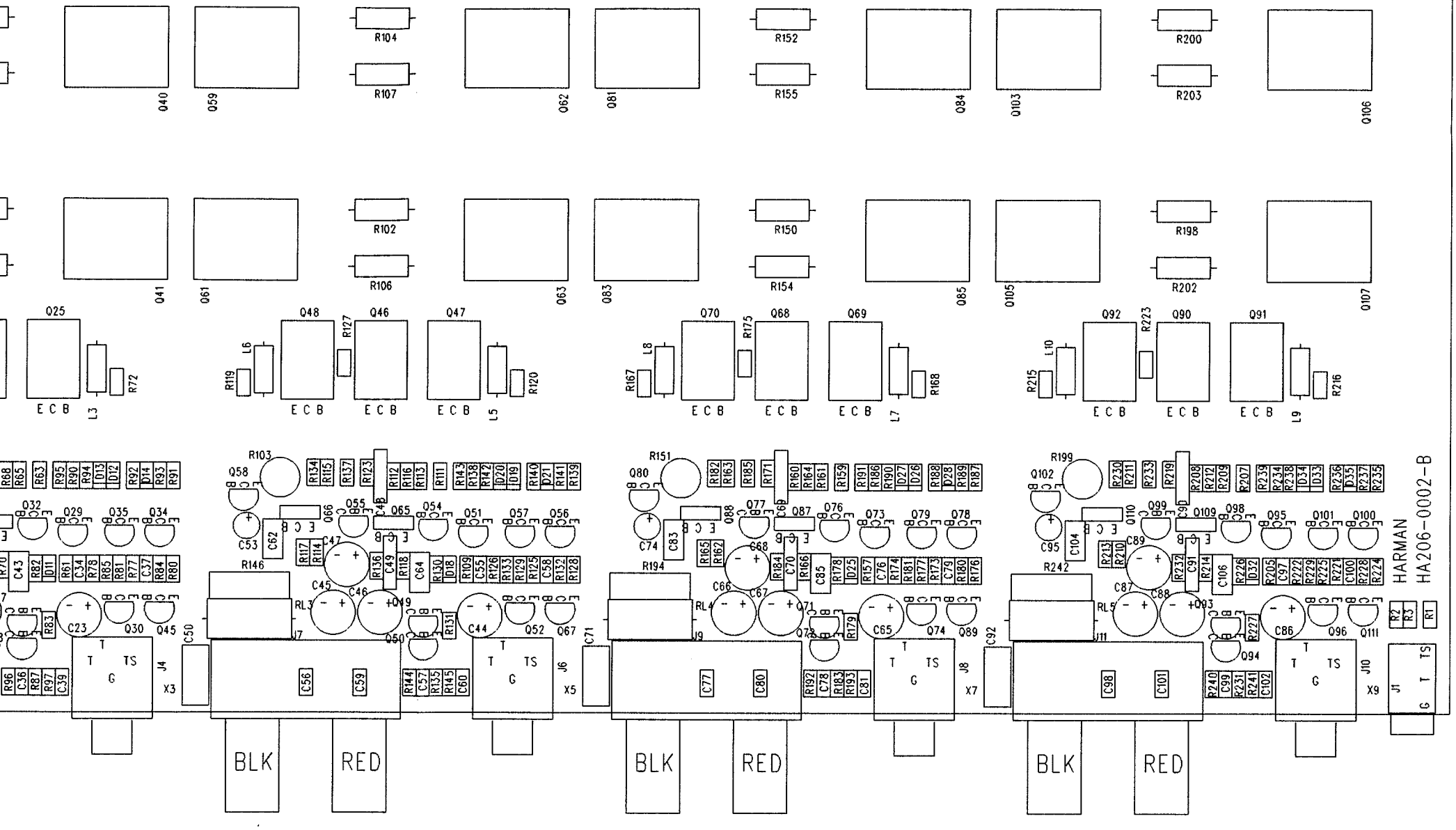

TOP SIDE SILKSCREEN

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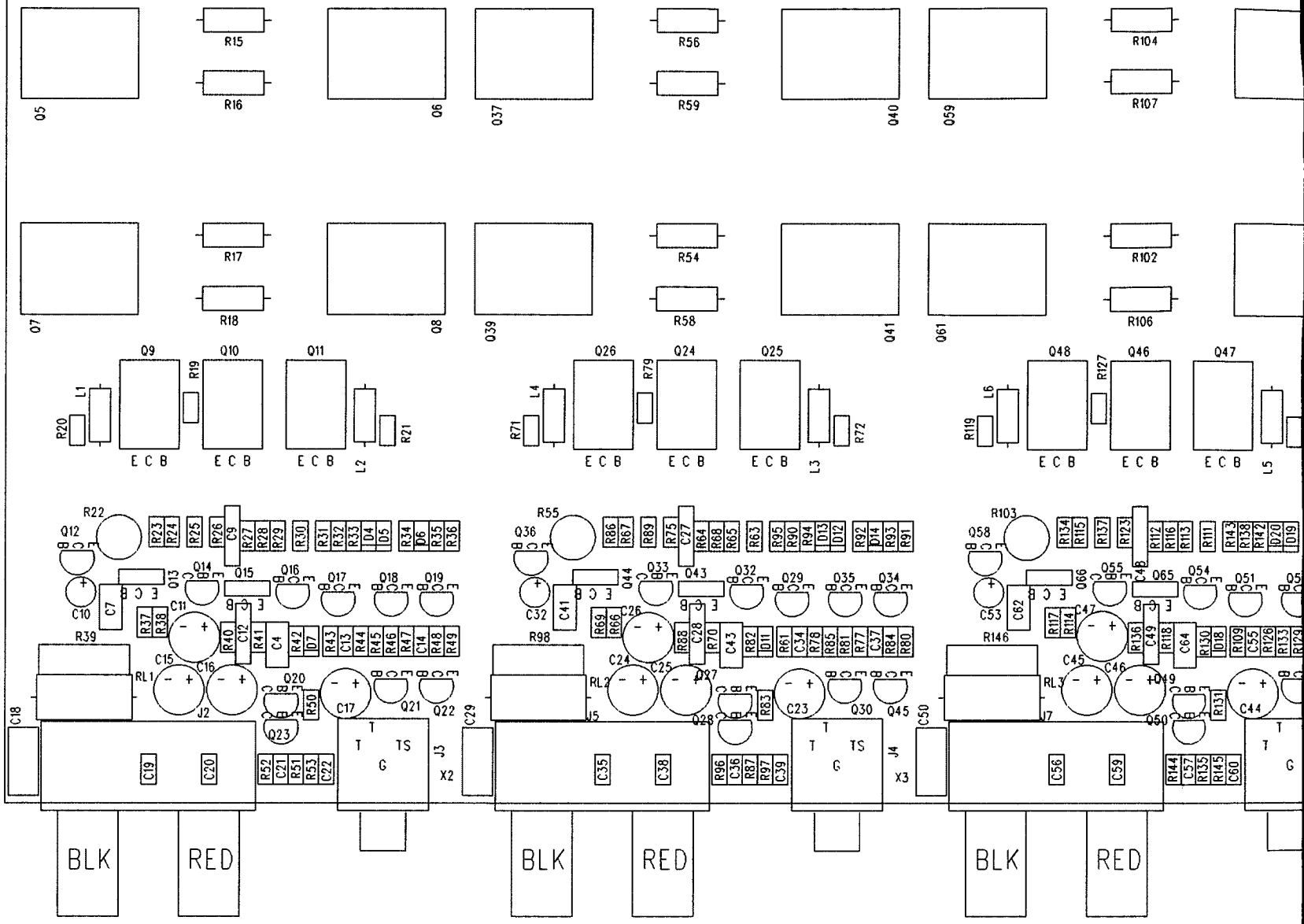

TOP SIDE SILKSCREEN

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